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Northern California's Computer Magazine November 26, 1990 • 76 FREE

MICROTIMES

Another Side of Bill Gates

BY JOHN PERRY BARLOW

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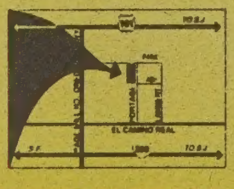

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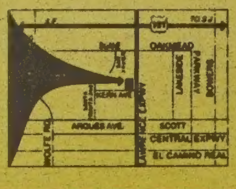

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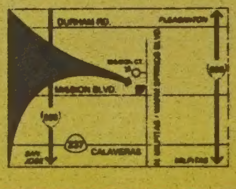

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AMERICAN
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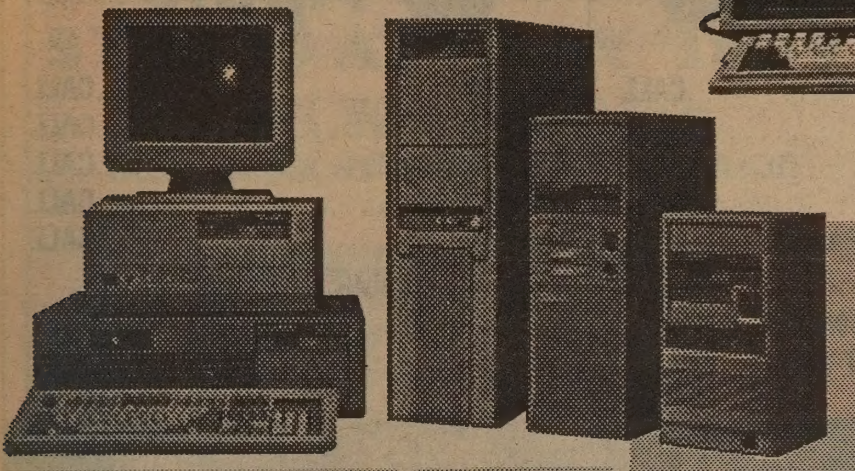

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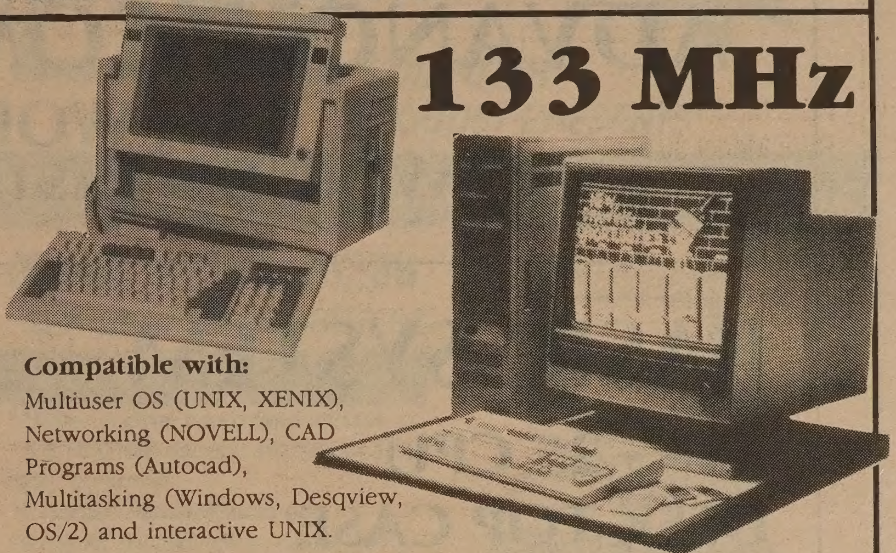

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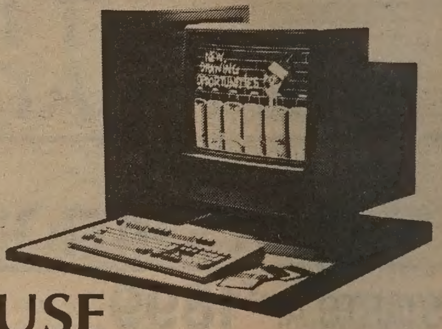

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NOV. 26, 1990 ISSUE #76
MICROTIMES™

TABLE OF CONTENTS

A NOTE FROM THE EDITORS:

When we heard Bill Gates advance the notion that every mind-boggling capability offered by the new NeXTs would soon be available on PC hardware—and hey, you can still run Lotus!—Barlow and I, as hardcore Mac users and major aficionados of cool toys, were a little dubious. Of course, we obviously had a fundamental culture clash with a company that, for example, regarded Command-LeftArrow-Click as an intuitive command for Select All.

However, Gates and Microsoft did not get where they are by misjudging their market or annoying their users or failing to deliver what their customers wanted, as (most recently) the phenomenal success of Windows 3.0 attests.

As for the cool toys—well, who knows what's coming that Gates is only hinting at? For example, Silicon Graphics, purveyors of amazing graphics hardware and a leading light of the UNIX workstation world, recently announced their latest product: IrisVision, a real-time 3D graphics card that delivers most of the capabilities and application support of the Iris workstations—and plugs into an AT or MCA slot. It runs graphics that leave you breathless—under DOS or Windows.

And hey, you can still run Lotus.

—*ME*

Cover Story

Another Side Of Bill Gates 52

By John Perry Barlow

Cover and contents photos: Michael Jay

In which Gates, the chairman, co-founder, and CEO of the most successful and influential software company in the microcomputer industry, meets lyricist, ex-rancher, ex-politician, and journalist-with-an-attitude Barlow. With interesting results.

Tell Us Your Choices For The MicroTimes 100 83

Our January issue will feature our fourth annual list of microcomputer industry luminaries, and here's your chance to tell us who should be on it.

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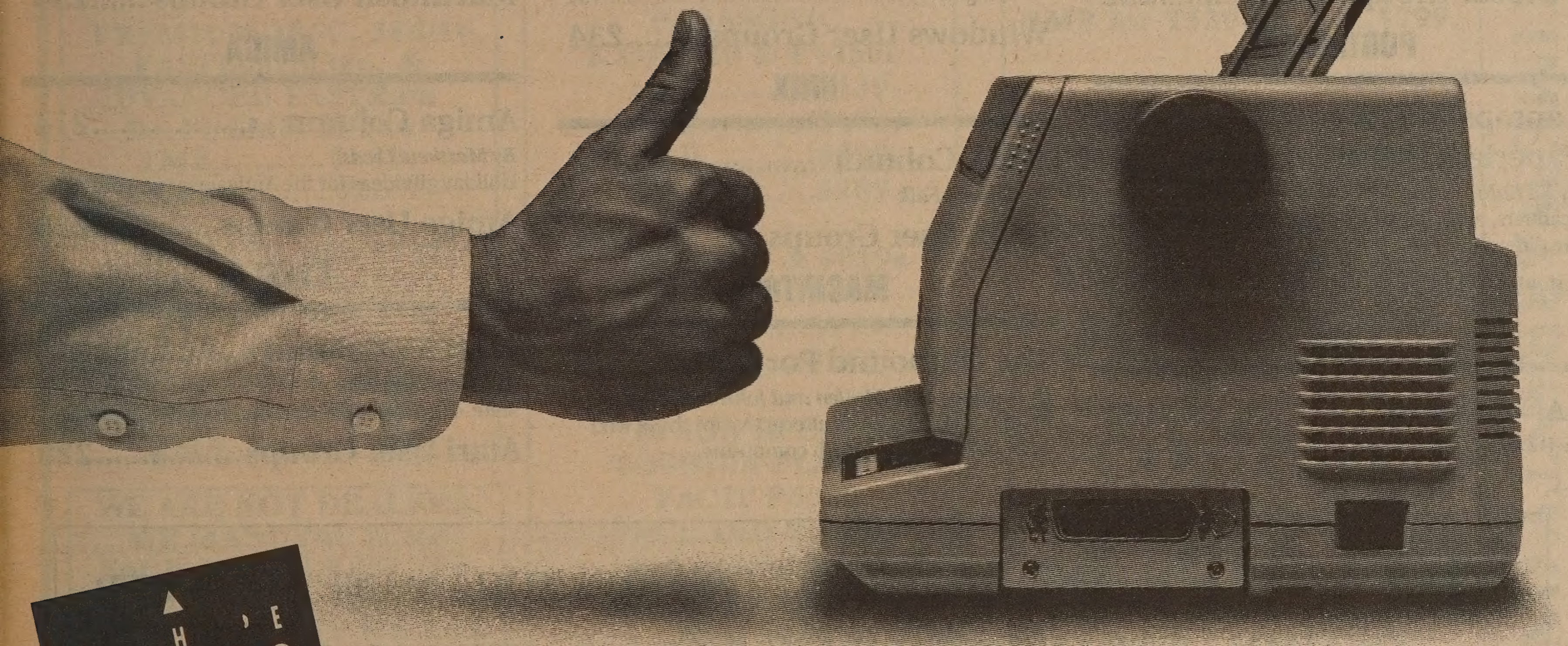

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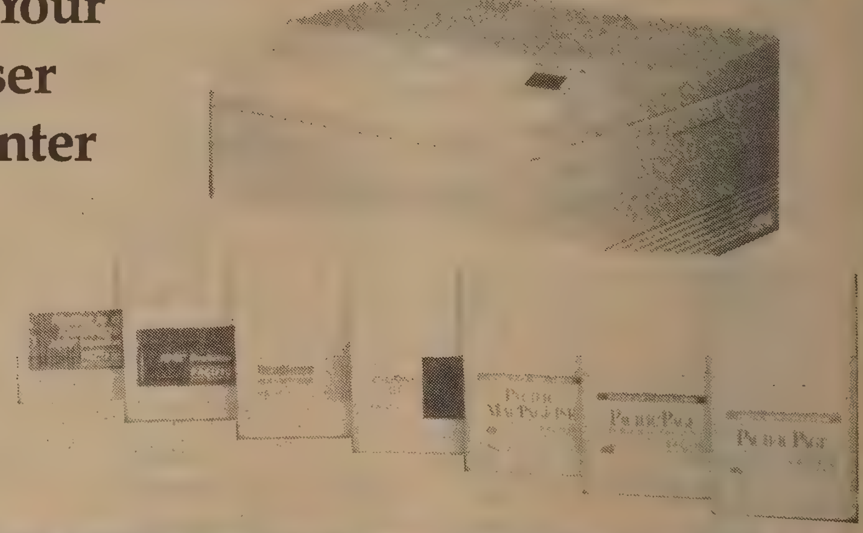

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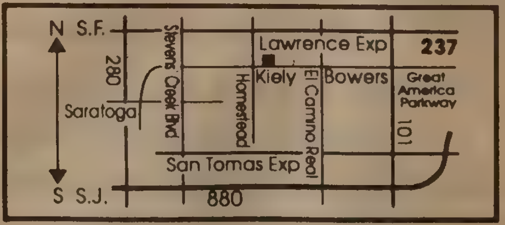

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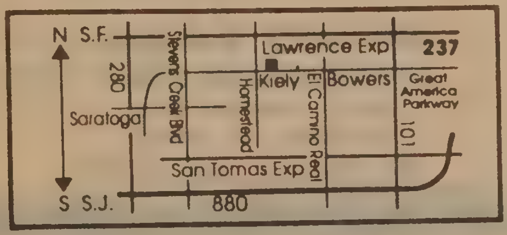

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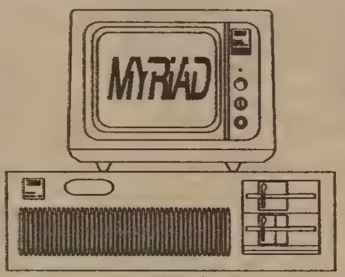

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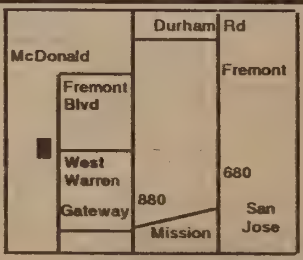

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INDUSTRY INSIGHT

BY PAUL HOFFMAN

Paul Hoffman is an industry analyst who has been covering microcomputer technology for ten years. He can be reached on USENET (phoffman @well) and MCI Mail (264-3171). He also writes popular microcomputer books.

ARBITRATOR FINDS INTEL BREACHED CONTRACT WITH AMD

The arbitrator hired by Intel and AMD to settle their long-running dispute about whether AMD can produce the 80386 chip family was partially settled last month when the former judge hired by the firms ruled that Intel acted in bad faith whenever possible with respect to the contract. The arbitrator, retired Superior Court Judge J. Barton Phelps, took almost three years to hear all of the arguments and to read the voluminous testimony given by AMD and Intel employees.

His ruling will be followed by one determining what damages, if any, AMD should receive from Intel.

The judge was fairly scathing about Intel's ethics with regard to the contract. He said that Intel acted with such bad faith that AMD could not complete its side of the contract. "This action is a classic example of a breach of the covenant of good faith and fair dealing, preaching good faith but practicing duplicity," he commented. Intel did this by finding the maximum fault possible in everything that AMD tried to do to meet its obligations. "Intel's failure to transfer the 8087 as required by the contract was a knowing, deliberate and unjustified breach of contract ordered or approved by the most senior officials at Intel."

Even though the ruling stated that Intel was openly and repeatedly dishonest with AMD from the highest levels of Intel management on down, Intel declared that it won the case because AMD will probably not get much or any damages.

Judge Phelps said that AMD had every right to ask for damages based on the breach of contract. After the initial ruling, Intel said it would appeal any ruling by the arbitrator that awarded AMD rights to the 80386, even though both parties agreed to abide by the arbitrator's rulings.

The contract was originally signed in 1982. At the time, it was common for every major chip company that released an important chip to have a "second source" in case the demand for the chip was too high or something happened to their production facilities. Major clients of the chip manufacturers would demand such second sourcing before they would commit to build systems that used those chips.

This is, in fact, still true for most manufacturers. Intel, by not following through on its contract with AMD, was able to tell client companies that it had a second source and thus get manufacturing commitments while not having to lose any market share to AMD. Because of the success of the PC and the fact that Intel was usually able to keep supply above or even with demand, few of Intel's customers complained when there wasn't a real second source.

PAPERBACK SOFTWARE GIVES UP, STOPS SELLING VP PLANNER

Lotus is one step closer to having the undisputed rights to the 1-2-3 look and feel. Paperback Software, the loser in the copyright case decided in June, announced that it would not appeal the ruling and would pay Lotus $500,000 for violating its copyright. Paperback also said that it would stop selling VP Planner, although it would continue to support its current customers.

The VP Planner line contributed more than two thirds of the company's revenue; Paperback may have to declare bankruptcy in the next few months or significantly scale back all of its operations.

If Paperback had appealed the case, a higher judge could have reversed the decisions of Judge Robert Keeton about what is

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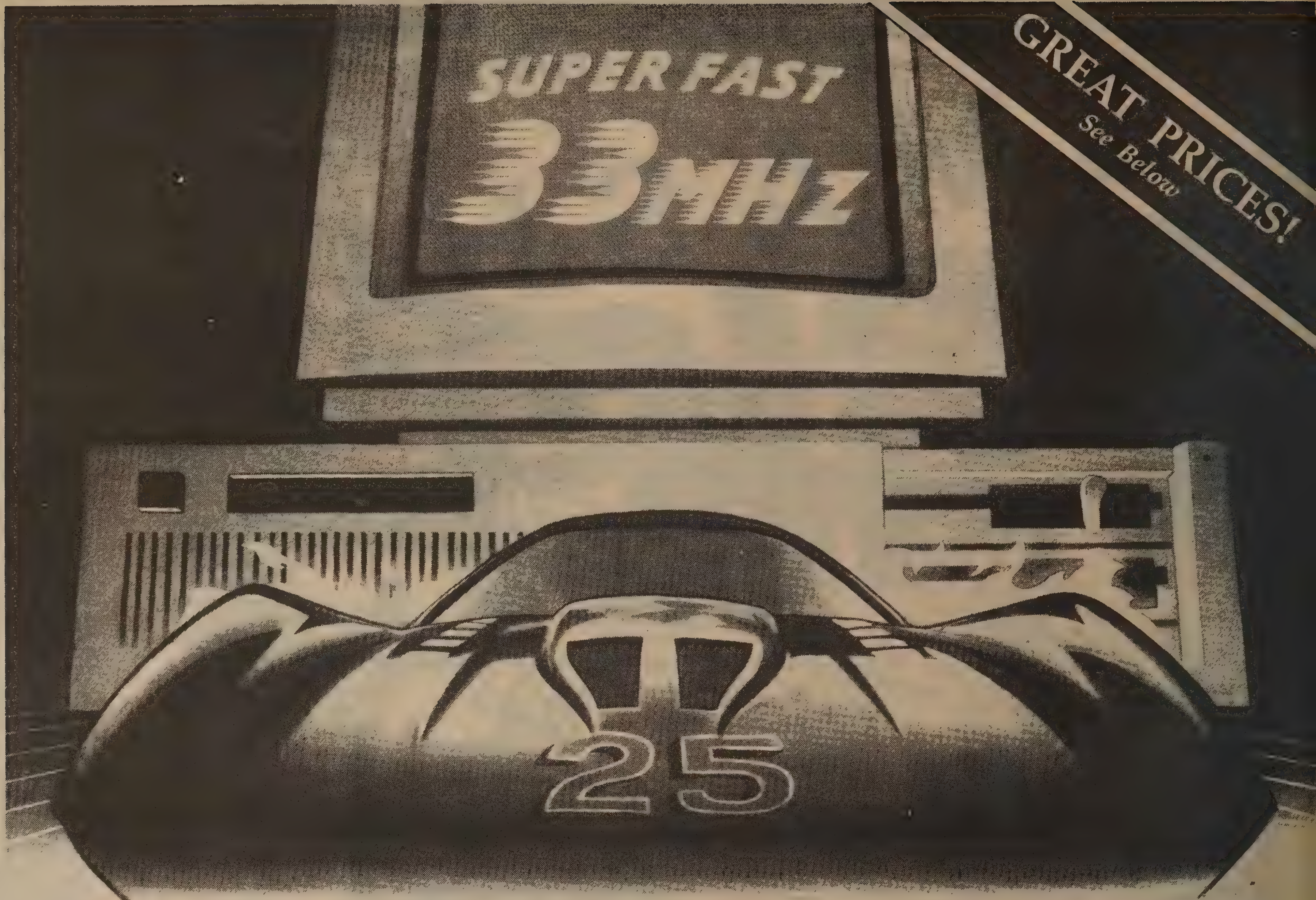

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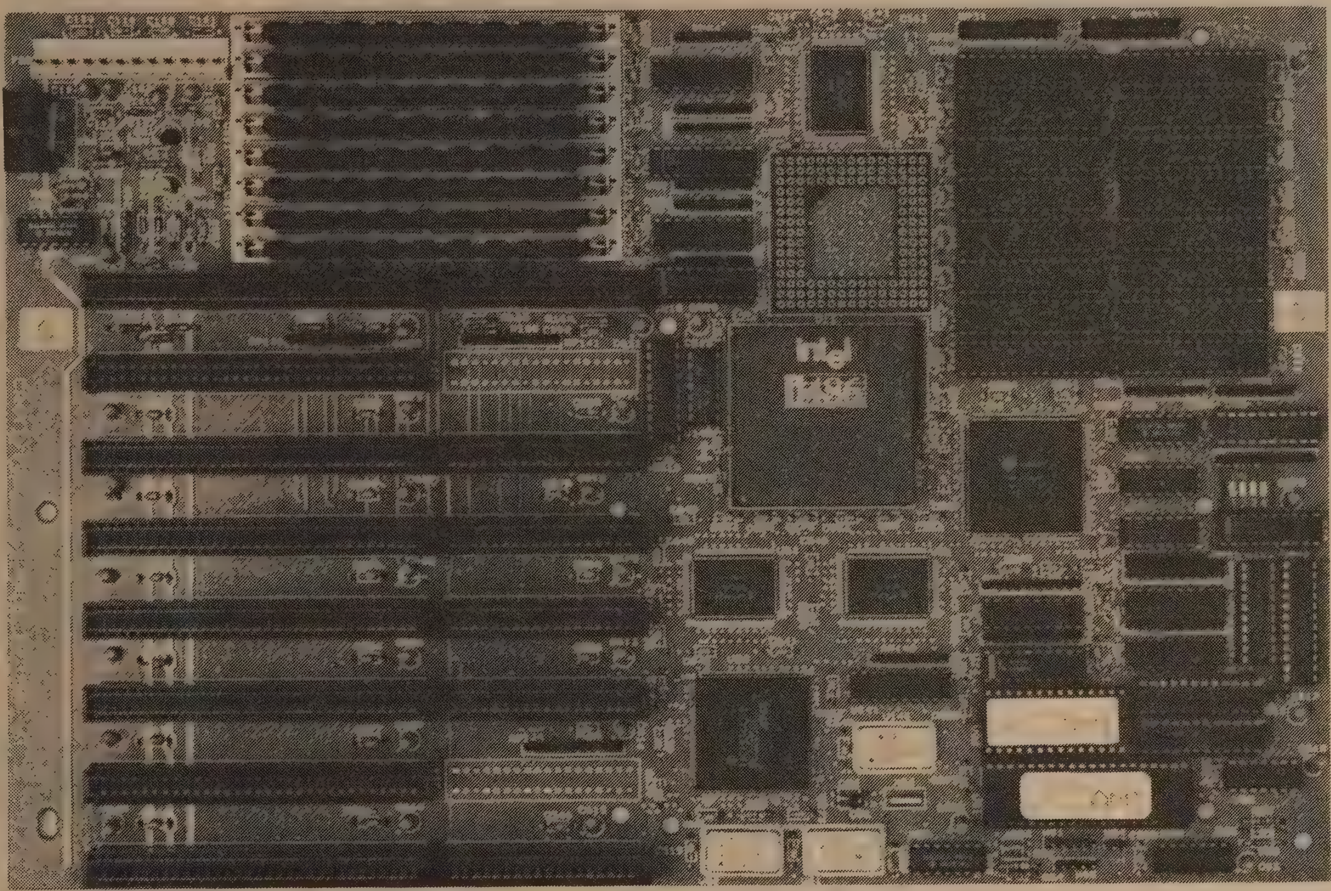

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copyrightable in the Lotus interface. However, pursuing an appeal would probably take years and cost Paperback hundreds of thousands (if not millions) more in lawyer fees.

Paperback decided to bite the bullet and try to survive on its other products and on whatever is left of the good will from its customers. The VP Planner line contributed more than two thirds of the company's revenue, so it is likely that Paperback will have to declare bankruptcy in the next few months or significantly scale back all of its operations.

Paperback's decision not to pursue the appeal does not affect Lotus's suit against Borland and Santa Cruz Operation. Judge Keeton will hear the first bits of those cases later this year. Lotus's case against Mosaic goes to trial as *MicroTimes* goes to press; it is unlikely that Mosaic will fare any better than Paperback, since they are relying on the same arguments that Paperback used, namely that the interface is not copyrightable, particularly when significant functionality is added to the product.

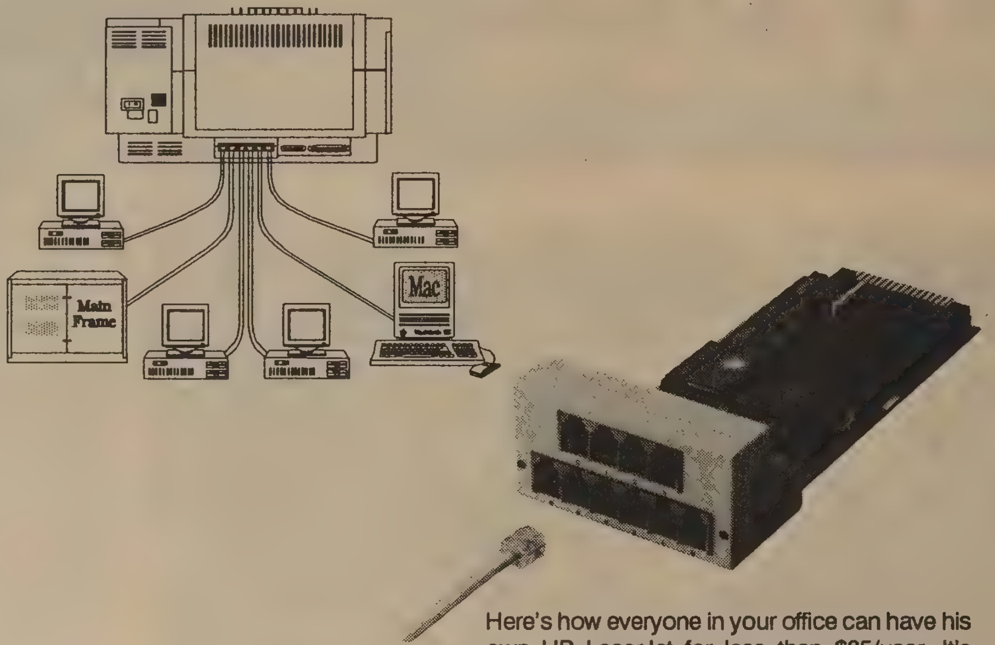
NEW CPUS FOR SMALL, FAST COMPUTERS

AMD and Intel both announced new chip sets that will lead to much smaller notebook (and possibly desktop) computers. The chip sets are CPUs that include the functions normally assigned to dozens of "support chips." By including those functions in the CPU chip, computers need much less space and can run faster.

In addition, both of the new CPUs have features that make battery-operated portables draw less power when the CPU is not in use and thus make the batteries last longer between charges.

AMD was first to announce an integrated CPU, called the 286LX. It's based on a 12- and 16MHz 80C286 CPU, with many of the additional support functions built in. According to the *Microprocessor Report*, the industry magazine for CPU developers, the 286LX has a special mode that stops the CPU's core clock, reducing power consumption by 95%. The chip can save even more memory by stopping all of the other clocks except the DRAM and real-time clock.

About a week later, Intel announced a similar concept based on the 80386SX CPU. Intel's offering is considered to be much more advanced than AMD's and is based on the 80386, meaning that



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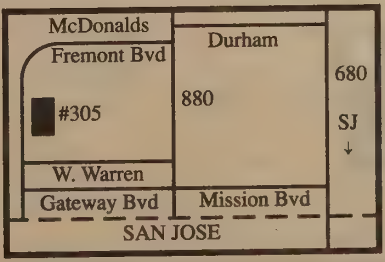

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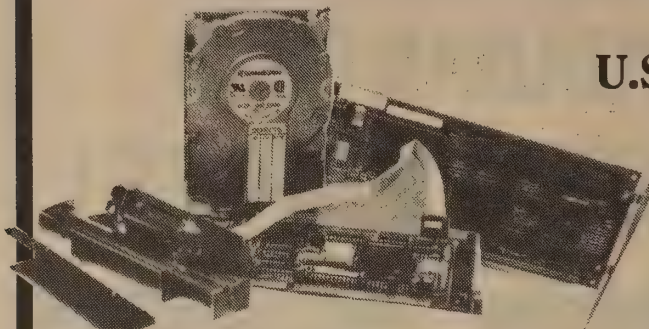

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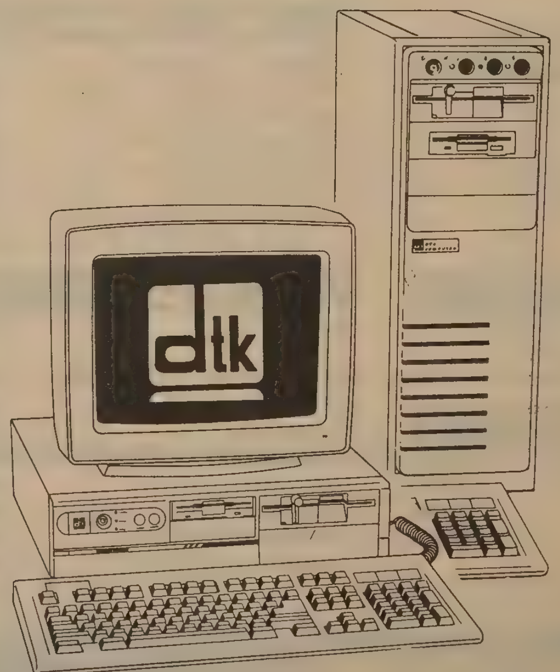

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computers that use it can use more advanced programs. Like AMD's chip, Intel's 386SL has many power-saving features built in specifically to make batteries last longer in laptop computers. It will initially be offered running at 20MHz.

Since AMD's chip is based on the 80286, it is really only useful in "entry-level" computers, not advanced computers that take advantage of the memory management features in the 80386. Thus, AMD priced the 286LX at less than half of Intel's price for the 386SL. Many notebook computer manufacturers will go with the AMD chip due to price, but it is likely that many will also go with the Intel chip so that their computers are more "high end." Since many manufacturers now have lines of notebook computers based on both the 80286 and 80386, companies will become familiar with the advantages and faults of these two chip sets and will decide which to use in the long run.

> **Like AMD's chip, Intel's 386SL has many power-saving features built in specifically to make batteries last longer in laptop computers. It will initially be offered running at 20MHz.**

Michael Slater, editor of *Microprocessor Report*, used these announcements to make a point about the competition for recognition in the press. Even though AMD announced a week before Intel, Intel's project is much

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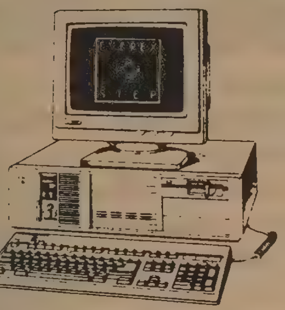

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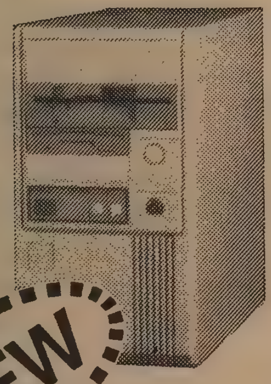

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486/25 w/ 128K cache	114.0	11.0
386/33 w/ 64K/256K cache	58.7	8.1
386/25 w/ 64K cache	41.9	5.8
386/20SX w/ 32K cache	27.3	4.2
386/16SX Entry Level	21.3	3.1

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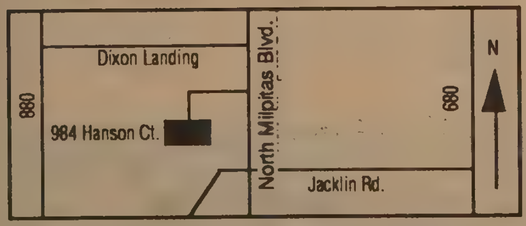

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further ahead than AMD's. Intel has samples now, while AMD will be sampling later this year. Intel also expects volume production three months sooner than AMD.

Slater contrasts the desire for "first of its kind" with "first in the press." Since both of these announcements are for chips that aren't shipping in quantity, the actual availability date is just a guess. "Overall, the microprocessor industry has a very poor record of making production shipments by the date first promised," he comments.

UNIX IN THE NEWS

DEC finally announced that it would support UNIX more fully so that it could compete more aggressively on open system contracts. The announcement allows Ultrix, DEC's version of UNIX, to run at the same time as VMS, DEC's own operating system.

Both DEC and most of its customers claim that VMS is a better operating system but that there are many cases where UNIX is needed for specific tasks. VMS is specifically optimized for the VAX hardware, so similar programs often run significantly faster under VMS. The unification of VMS and Ultrix gives current and future DEC customers many more choices, since the merged operating system will run both types of applications. DEC emphasized that it expected most of its customers to continue using VMS in the future.

•The first version of what might be a significant challenge to UNIX is now being shipped to computer manufacturers for their evaluation. Open Software Foundation finally shipped OSF/1, the second major piece of software from the consortium formed to challenge AT&T's control of the direction of the UNIX marketplace. If OSF/1 turns out to be stable and fast, commercial versions should begin appearing early next year, and it could be a major standard by the beginning of 1992.

THE STATE OF REAL-WORLD NETWORKING: INTEROP '90

Some shows are for end-users, others for volume buyers, others for people who want to see tomorrow's technology. Interop '90 proved to be none of these, mostly due to the field it cov-

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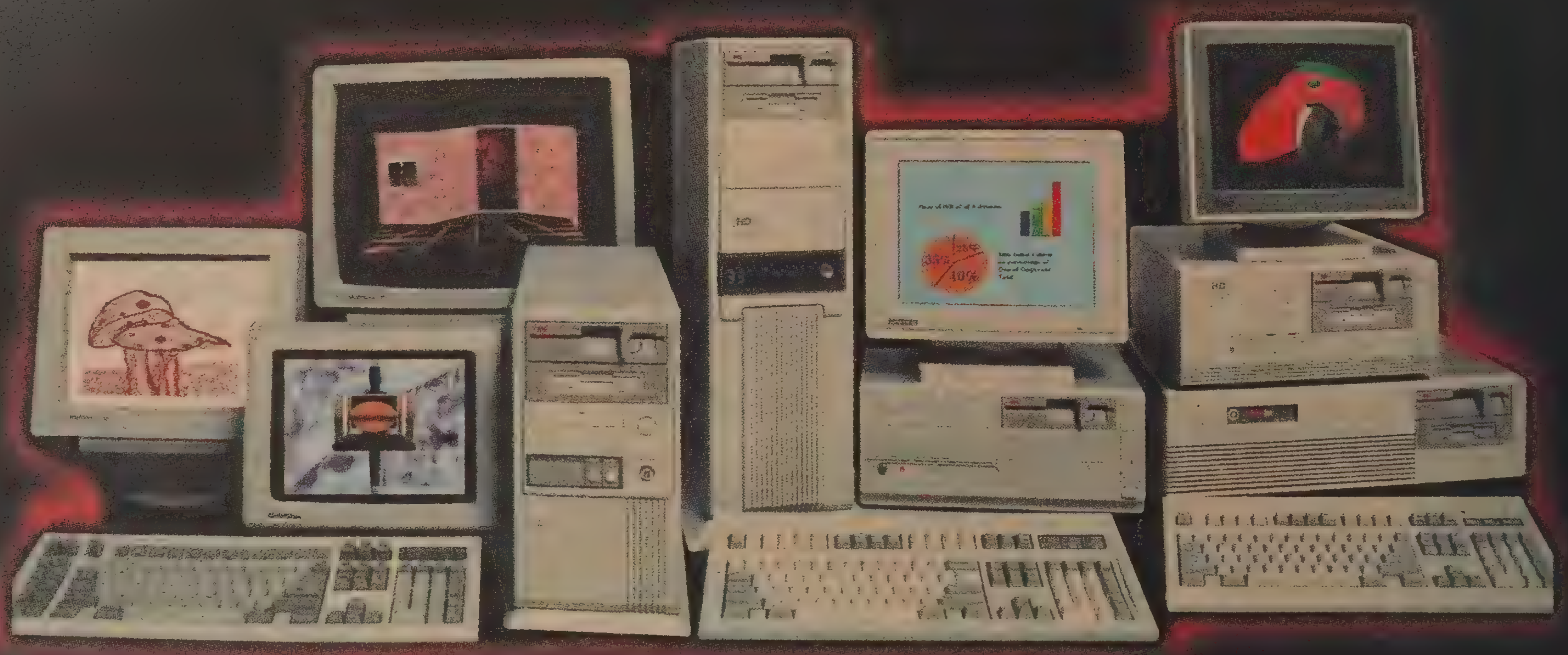

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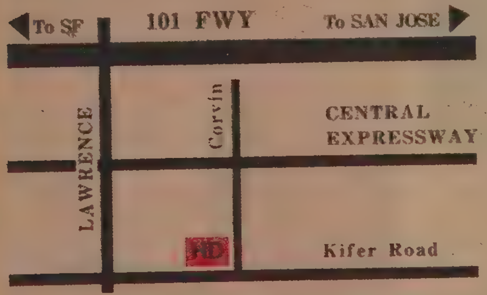

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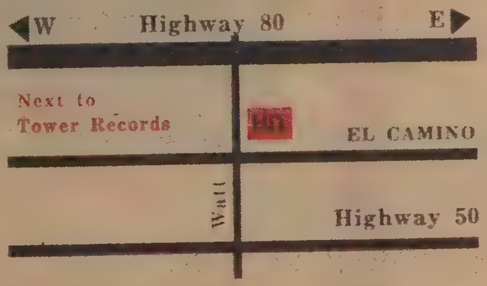

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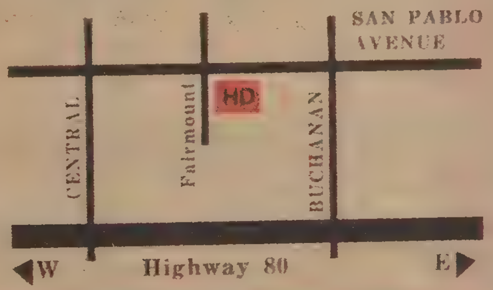

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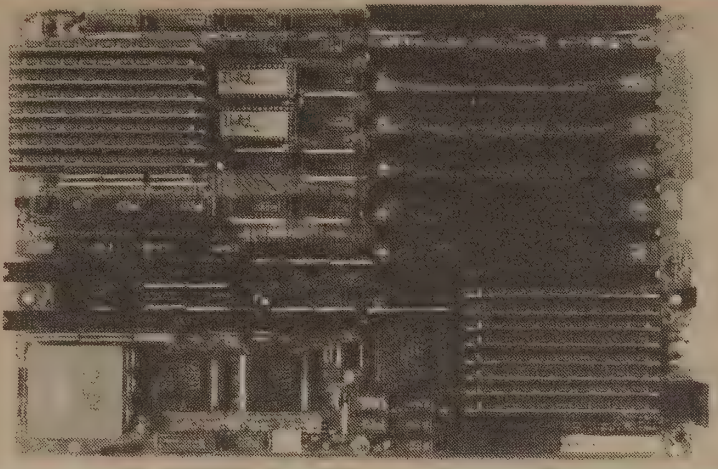

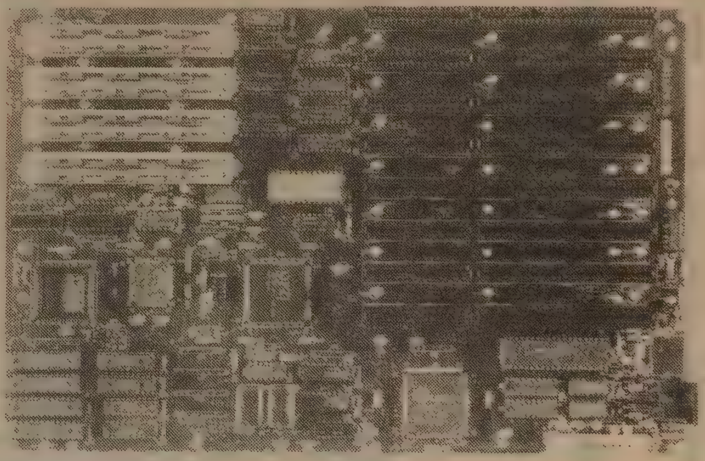

Comparison between SVT 486/25 and that of leading 486

Performance of the SVT 386SX

	SVT486	Other 486	% increase	SVT386SX
Memory Performance Tests:				
Extended Read	1.05	3.19	203.81%	1.32
Extended Write	1.05	3.07	192.38%	1.21
Video Performance Tests:				
Direct Screen Access	1.86	2.74	47.31%	1.81
Teletype w/o scrolling	0.33	1.1	233.33%	0.5
Teletype with scrolling	1.09	2.25	106.42%	1.27
System Test Results:				
Database Appl. Simulation	368.028	9.261	3873.96%	385.713
Word Processing Simulation	709.616	178.575	297.38%	659.815
CAE/CAD Simulation	804.282	255.406	214.90%	458.256
Throughput Test	692.088	208.668	231.67%	577.685
Video Display Test Results:				
Aggregate Video Test	4042.166	102.537	3842.15%	3183.653

Features of SVT 386SX

25 MHz Speed

Shadow RAM + 256K Remapping

Direct Map Posted Write Cache (16K-128K)

Supports 256K/1M/4M DRAM

Landmark (ver. 1.14) 36.9

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ered.

In the PC world, most people think of networking as hooking together many PCs and Macs on a single network and running software such as Novell's NetWare. If you're lucky, there might be a minicomputer or a gateway to the company's mainframe. In the rest of the computer world, however, PCs are the least of the concerns of network administrators.

> **Networking PCs is relatively easy since PCs can usually all run the same software. "Real world" networking, on the other hand, is much more difficult, since you are usually trying to get different types of computers from different companies to share data.**

Networking PCs is relatively easy since PCs can usually all run the same software. "Real world" networking, on the other hand, is much more difficult, since you are usually trying to get different types of computers from different companies to share data. The hardware and software involved in hooking together larger computers from different manufacturers create a living nightmare. The

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286-12 MHZ

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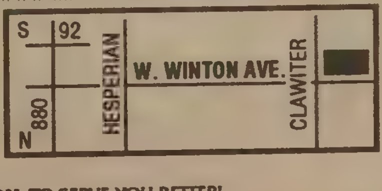

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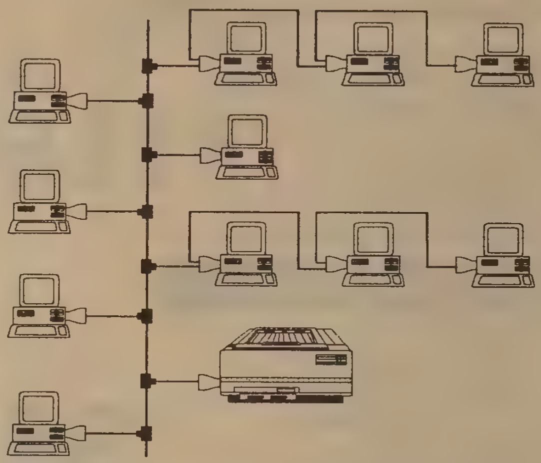

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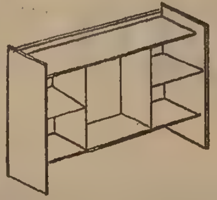

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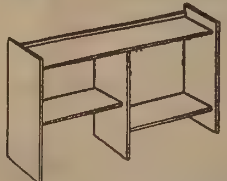

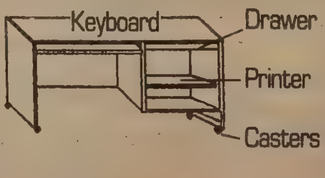

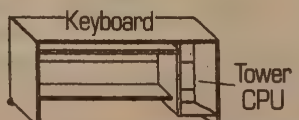

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annual Interop show is designed to make that nightmare a little less scary.

The attendees at Interop '90 were split fairly evenly between serious network jocks and people from the computer industry who have to work with networking vendors. The companies exhibiting at the show were all over the field: computer manufacturers showing off how well their hardware networks, network hardware and software vendors of all sizes, people selling books and training on how to set up and choose networks, and industry standard organizations.

The last group was the most interesting. For each major network standard, there was a large booth crammed with dozens of hardware and software manufacturers' wares running that standard. There were booths for ISDN, ONC/NFS, FDDI, SMDS, 10BASE-T, SNMP, and a central booth that had connections between all of the above. (The networking world is more rife with strange acronyms than any other part of the computer industry; fortunately, they were handing out "The Interop Pocket Glossary of Networking Terms"...) If you were interested in a particular type of networking, you could go to a single booth and get information about all of the vendors at once.

Some of the people running the standards booths understood how dry the material was and lightened it up. For example, 10BASE-T is a hardware specification for a 10-megabit-per-second LAN system based on phone wire. To show how resilient the cabling system is, the booth had a "network hell" which consisted of cables wrapped around traditional noise sources, such as an old electric motor and flaky fluorescent light fixtures. The network still ran fine, even though there were a huge number of electrical spikes.

Interop '90 showed that competition in the networking market is not a terribly effective way to set standards. Going from booth to booth, you had to keep asking the salespeople, "What do you support and what do you not?" Because these companies are as honest as the rest of the computer industry, you usually had to follow that with, "No, really: what do you have shipping *today* and what is simply announced?"

The other sad fact that was evident from walking the floor is that networking "solutions" don't always work well together. In almost every large booth, at least one computer or terminal was down due to networking problems. Some of these were the systems connected to the main show network, but others were connected to that manufacturer's own wares in the booth. To be sure, most things worked well, but it was very disconcerting to see so many non-working systems with technicians furiously trying to fix them. ■

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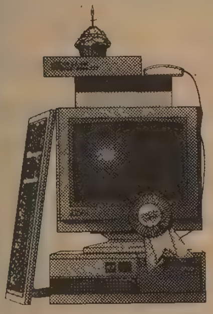

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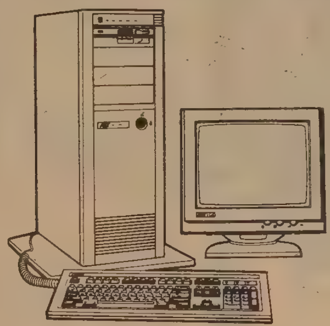
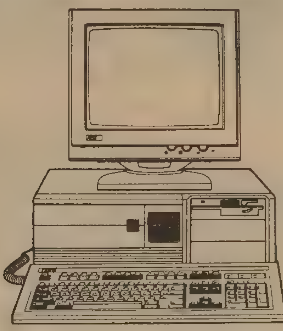


Choosing The Right Computer Products For the 90's



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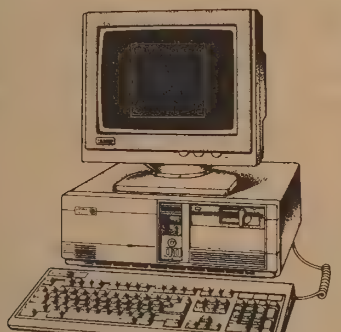

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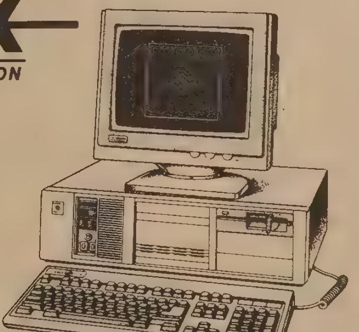

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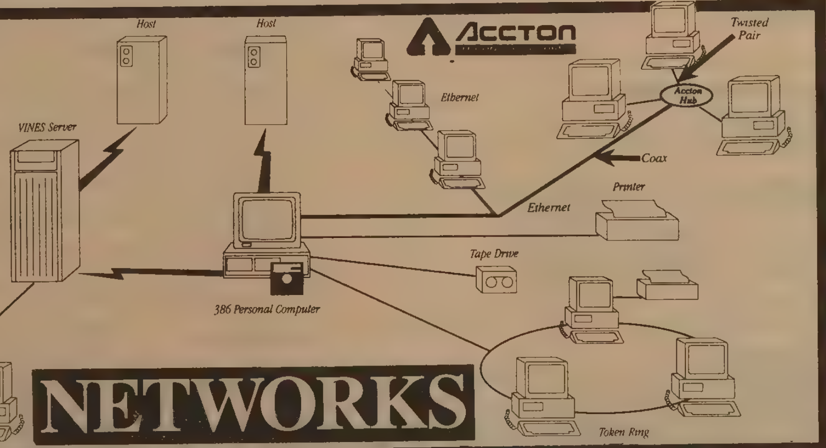

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HIGH TECH NEWS FROM JAPAN

Whether it's the latest color printing technology, a faster processor, or handwriting-input portables, the Japanese computer industry has an important and often complex relationship to its US counterpart. And whether your interests lean to international markets or you just want a preview of products we'll eventually be seeing here, you'll make more intelligent decisions if you're aware of current developments.

Beginning this issue, MicroTimes *will feature a selection of news from the Japan Marketing Group. JMG offers its subscribers an extensive weekly news digest covering products and events in the Japanese computer industry, and we're happy to have the opportunity to make some of this information available to* MicroTimes *readers. (Japan Marketing Group, 400 Groveland Ave. Suite 312, Minneapolis, MN 55403, 612/871-7889.)*

•Canon announced a floppy disk drive, the FV-540, that will read the 2.5" video floppy disks used by Canon and Sony still video cameras. The drive hooks through a SCSI port to a Mac II and can transfer pictures at very high speeds. The price is $2,200.

•Hitachi introduced notebook word processors called "With Me" to the student and young professional markets. The battery-powered PCs are lightweight and come in pink, green, and gray. They cost $1,400.

•NEC announced that it's opening a PC production plant in West Germany in 1992 to serve the European market. The plant will help NEC overcome not-built-in-EC tariffs scheduled to take effect in 1992. NEC also announced that it will begin selling and servicing its PCs in East Germany soon.

•Nippon Steel will start selling AT clones in the US in November. It will sell both 80286- and 80386SX-based laptop PCs under the LIBREX trade name. The PCs will be first manufactured in the US by an independent company and later by Nippon Steel.

•Kinokuniya, the huge Japanese bookstore chain, announced a new database available on NEC's nationwide network. The database holds data on 260,000 people, 140,000 books, and 750,000 articles. Accessing the database costs $1.50 per minute.

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LANDMARK = 21

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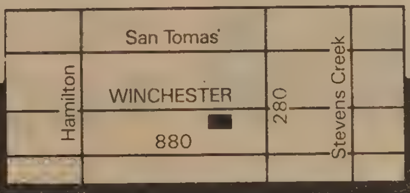

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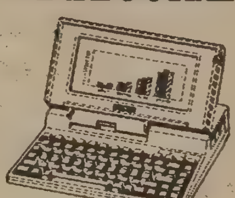

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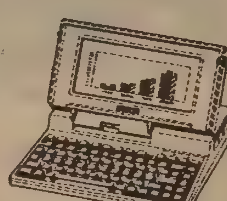

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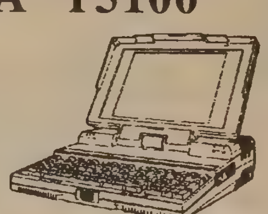

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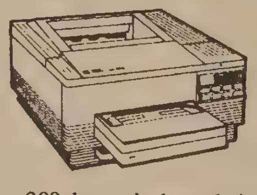

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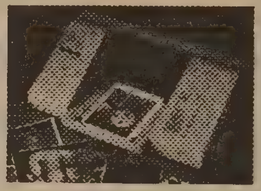

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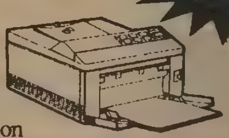

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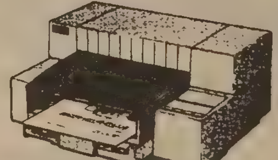

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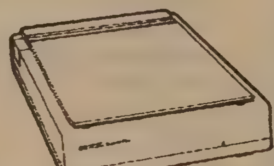

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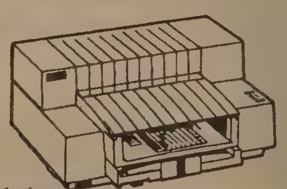

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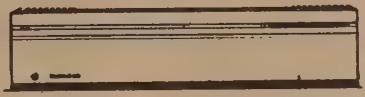

Macintosh IIsi, Macintosh IIci, Macintosh IIfx CPU

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Macintosh® IIci
(CPU w/4 mb)

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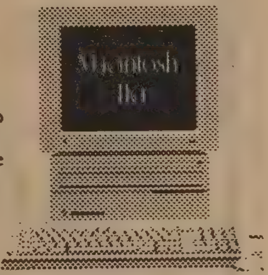

At 25 mhz, the processor in the Macintosh IIci speeds up performance and saves you time. The high-performance Macintosh IIci can run most applications 45 percent faster then the Macintosh IIcx (up to 75% faster with the optional RAM cache card). Built-in video support eliminates the need for a separate video card and frees an expansion slot for other uses. Keyboard and monitor not included.

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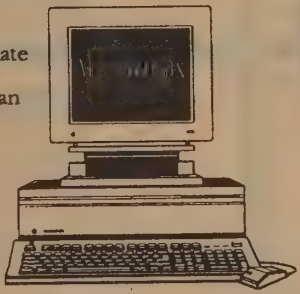
Macintosh® IIfx
(CPU w/4 mb)

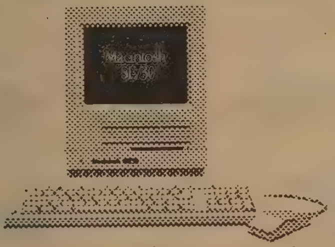


Macintosh IIfx, the ultimate machine providing power and high-performance in an affordable package.

For maximum expandability the Macintosh IIfx comes with six expansion slots and is expandable to 8 mb of RAM.

The Macintosh IIfx is System 7.0 capable and an excellent choice for technical professionals. It also is an excellent platform for multimedia.

Macintosh® SE/30

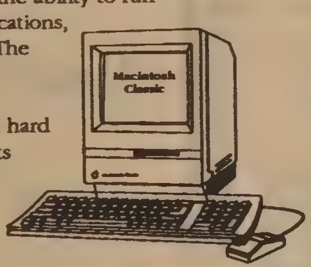


The Macintosh® SE/30 combines high performance in a compact, all-in-one, transportable design. Expandability is available through the internal 030 Direct Slot™. You can add a wide range of options, including video, memory, and communications cards. As a member of the the Classic Macintosh product line it can run all the applications for the Mac up to 4x faster then the Macintosh® SE. Expandable to 8mb of RAM, and available with a 40 or 80mb hard disk.

New Product!

Macintosh® Classic®

The Macintosh Classic is the ideal entry-level machine. It offers all of the most valued advantages associated with Macintosh, including ease of use, and the ability to run thousands of existing applications, all at an affordable price. The Macintosh Classic built-in capabilities allow it to be configured with an internal hard disk and you can expand its memory to 2MB.



The all-in-one design of the Macintosh Classic 2/40 comes with 2 MB of RAM (expandable to 4MB), internal 40-megabyte hard disk drive, internal 1.4-metgabyte Apple SuperDrive floppy disk drive, ADB keyboard and mouse, system software and training disk.

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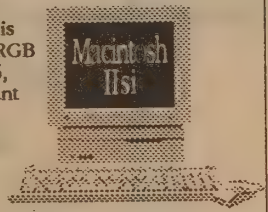
Macintosh® IIsi



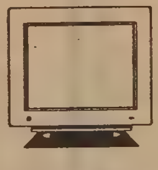
Buy this Macintosh ® IIsi and this AppleColor™ High-Resolution RGB Monitor now through January 5, 1991 and you'll get a $250 instant rebate from Apple.*

The new Macintosh IIsi is an excellent choice for business or educational use.
With built-in cache for increased performance, the IIsi delivers serious number crunching. Rich color and built-in sound capabilities are a given with the IIsi. And because it has built-in video support, it will drive four different Apple monitors.

New Product!

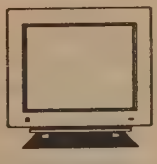
Macintosh® 12" RGB Color Display

The Macintosh 12" RGB display is Apples' affordable color display for Macintosh computers. It can be used with any Macintosh computer with a built-in video port (except the Macintosh Portable) or one equipped with an appropriate video card.



512 Pixels x 384 Lines

12" Monochrome Display



640 Pixels x 480 Lines

The Macintosh 12" Monochrome Display offers users of modular Macintosh computers an affordable option for high resolution display of text and graphics in black and white, or gray-scale.

Apple® Personal LaserWriters®

Apple® Personal LaserWriter® NT

The Personal LaserWriter NT printer offers full PostScript® text and graphics all in a compact design. The printer has an AppleTalk™ Interface built-in providing networking capabilities and connectivity to any Macintosh computer. With its flexible paper handling it can print up to 4 pages per minute. Its the ideal printer for 1 to 3 users.

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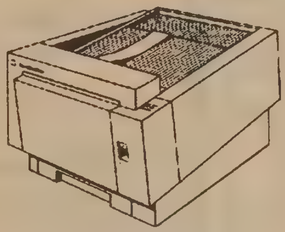
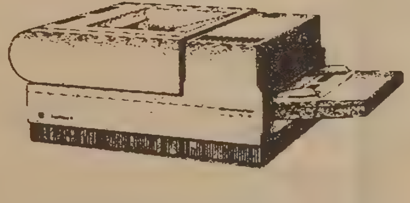


Apple® Personal LaserWriter® SC

The Apple Personal LaserWriter SC with its compact design, is ideal for the individual user. The Personal LaserWriter SC gives you full-page, Quickdraw™ imaging - for text as well as graphics! The Personal LaserWriter SC can also print up to 4 pages per minute and provides flexible paper handling capabilities.

Apple® LaserWriter® II



For PostScript® text and grapfhics, or networking requirements, get a LaserWriter IINT or IINTX. Both units produce 300 DPI output, print up to 8 pages per minute, and come standard with 2 megabytes of RAM.
For the fastest performance, the LaserWriter II NTX has a built-in 68020 processor that prints up to four times faster then previous LaserWriter printers.

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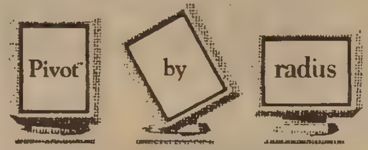
The Radius Pivot™ Display



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The Pivot™ Display changes orientation to match the format of your work. Use the full-page orientation for word-processing and switch to the landscape mode to work on your spreadsheets. 4 levels of gray standard, upgradeable to 16-levels. Available for the SE30 or the Macintosh II family. Video card included in above price

Radius TPD

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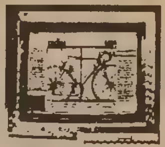
*including Video Card

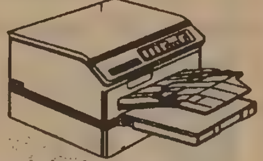


TheRadius TPD has one of the largest active screen areas of any 19" monitor and at 1,152 x 882 pixels at 82dpi, it can display more data than some 21-inch monitors.

radius

QMS

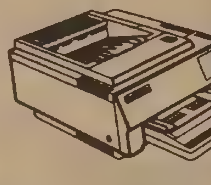
ColorScript 100 Model 10



The ColorScript 100 uses a 68020 processor to produce the highest quality color graphics. This unit is the most inexpensive color printer on the market today! If you need color output, this is the unit for you!

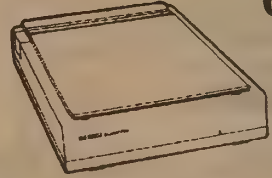
Call for Pricing!

QMS PS-810



The PS-810 ia a true Adobe Postscript™ printer operating at 16Mhz, using the industry standard Canon engine. At 8 pages per minute , its also one of the faster printers on the market!

Abaton Scan 300



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Abaton's 300GS scanner is a high-quality gray-scale scanner. With the quality of far more expensive units and a price to fit in your budget, this is the unit for you!.

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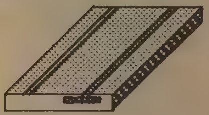

The InterFax 24/96 modem is a 2400 baud modem and 9600 baud fax that has more features then some of the most expensive fax machine. A must for any office environment using Macintosh computers!

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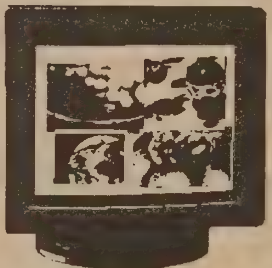

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RasterOps new Flicker-Free 72 dpi WYSIWYG 24-bit graphics board and 19" Color Displays for the Macintosh II CPUs and the SE/30.

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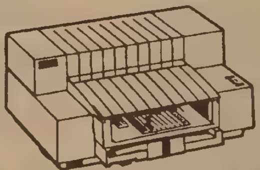

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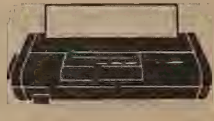

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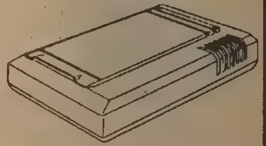

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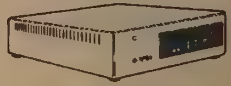

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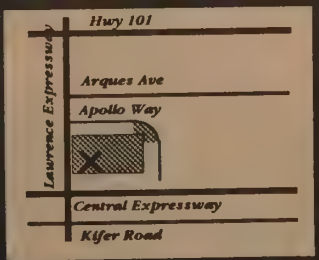

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Controlling What Computers Read

BY JIM WARREN

REALIZABLE FANTASIES

This column considers futures for fun and profit—viable techno-tools that remain fantasies only because you haven't yet produced 'em. And it reviews a Congressional report, provocative for our future. Go get 'em—both of 'em!

BEFORE RECOGNITION

Optical character recognition (OCR) programs are becoming really viable for rapid input of typed and printed materials. (I've been delighted with Caere's unusually robust OmniPage, scanning through an Abaton 300/GS—though I've not yet tried their strongest competitors. Of course, I'm using a Mac, and of course I want more, more, more—the essence of this column.)

Diverse, maximum-utility image-processing systems need some specialized tools to apply to the digitized scanned image before attempting text recognition—tools designed to work with, and as an integrated part of, the OCR system.

They should work after a bit-map, grayscale or color image has been input from the scanner, and *before* character recognition begins. [Note: Many OCR packages, such as OmniPage, automatically draw boxes around what they perceive to be logical sections of text and other images, then allow the user to select scanning sequence.]

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Jim Warren founded InfoWorld, *the DataCast proposal for broadcast-based paperless electronic newspapers, Video Initiative, Wireless Digital, Initiative, Inc. and one of the nation's largest public microcomputer conventions. He was founding host of PBS television's "Computer Chronicles" series, founding editor of* Dr. Dobb's Journal, *founding president of the Microcomputer Industry Trade Association and has chaired various computer professionals' organizations. He holds graduate degrees in computing (Stanford), medical information science (UC Medical Center), and mathematics.*

DRAWN & QUARTERED

Users should be able to delete some or all of the boxes proposed by the OCR pre-scan. Further, they should be able to draw their own arbitrary polygons in the digitized image by pointing and clicking. (A computer is obsolete and inadequate if it has no pixel-level pointing device—a mouse, trackball, etc. No, arrow-keys are not adequate substitutes. But, of course, I'm not opinionated...)

Such polygons should be permitted any angles and any shapes —not limited to rectangles, and certainly not limited to horizontal and vertical edges. At any time, the user should be able to zoom in and out, even when creating the polygons.

One user option for zooming should be to have the result centered on the screen at the point in the image where the pointer was located before the zoom command—as is common in painting and drawing programs.

Minimum zoom resolution should display at least the entire scanned image. Maximum resolution should make it easy to select individual pixels with the pointer, regardless of the scanner's resolution (usually 300 dpi—dots-per-inch). There should be a reasonable number of steps between min and max—certainly more than two or three, inclusive. Basic pixel and area editing—i.e., painting—tools should be available, allowing cleanup of imperfect scanned images.

VIRTUAL VEGIMATIC

After drawing any polygon, the user should be able to select it or any other polygon. A selected polygon could be entirely cut out of the digitized image, like clipping it out of the original document. Or it might be marked for specialized non-OCR processing—marked and processed as a table or graph (several kinds) or line-art or half-tone or grayscale or color or photo image. (Note that graph recognition—preferably feeding into a spreadsheet—is a major fantasy, all unto itself.)

Users should be able to replace the bits in any polygon—including an empty one—by typing bit-images of text. Of course, they should be able to specify the font(s), faces, sizes and justification for the text they type, as is usual in adequate text editors.

The option of replacing or adding text allows users to add their own comments—"marginal notes"—as they choose, and allows them to clean up text that the OCR software might find dirty and difficult to recognize.

Only after the user makes these configurations as desired should OCR begin.

There's one more important pre-scanning option users ought to have. Remember that OCR programs make default decisions about which areas of text to scan in what sequence.

The user should be able to override the default scanning sequence by clicking on the

Users should be able to delete some or all of the boxes proposed by the OCR pre-scan. Further, they should be able to draw their own arbitrary polygons in the digitized image by pointing and clicking.

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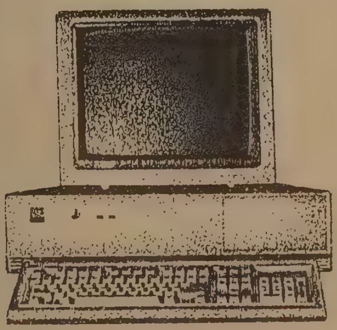

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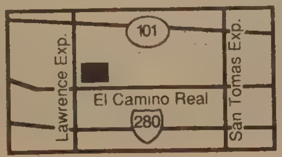

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desired polygons in the user-configured scanning sequence. This includes omitting some polygons which might contain interesting images that aren't text, or text the user doesn't want scanned, but nonetheless are worth retaining as part of the image-file.

That's all there is to it—before OCR. In the "Files After OCR", there's a whole other mound of techno-turf awaiting ever more robust landscaping by entrepreneurial toolmakers.

UNRELATED BITS

•MIT's Media Lab in Cambridge, MA is offering some really exciting, innovative proposals—and prototypes—for HDTV and "teleputers," integrating full-fledged computers with high-definition video/television. So why does MIT have no prominent counterpart at Stanford, UC Berkeley, UCLA, or Cal Tech? Is it too many defense contracts, or too many tenure-protected posteriors resting on their theoretical laurels while sneering at significant *pragmatic* "contributions to knowledge"?

•Tovar has suggested that a Software Writers' Guild (like the Screen Writers & Actors' Guild) might offer such things as beta-testing, hardware feedback and legal insurance with guidelines. Hmmm—how about some "bulk-rate" legal insurance for programmers, to pursue some much-needed class-action cases against big-company repression?

•Someone asked: Should *MicroTimes* have a "Personals" section? They preferred that their proposal be published without attribution.

•Been meanin' to praise this for months: It's really nice that Farallon, in dealing with a proliferation of PhoneNet clones, did not pugnaciously launch a legal missile. Instead, they just sent a polite, common-sense letter offering reasonable licensing agreements, and most of the companies involved took them up on it. Neat! [For details, see the Industry Insight section of the May issue of *MicroTimes*.]

WHERE'S CONGRESS GOING?

As interesting for its emphasis as its content, Congress's Office of Technology Assessment (OTA) issued a Special Report: "Science, Technology and the First Amendment." That's the one telling Congress not to abridge freedom of speech, press, peaceable assembly, or right to petition Government to redress grievances. (OTA-CIT-369; dated January 1988.)

Now, what specific technology would *you* mention first in such a report? Electronic speech or email? Electronic press via global networking? Assembly via computer teleconferencing? Access to computerized government files to allow informed redress of grievances? Congress's technical futurists had a different emphasis.

OTA began: "Science and technology may affect the balance between First Amendment rights and government interest by changing power relationships." The first mention of specific technology—except the printing press—began: "Information and communications technologies, such as sat-

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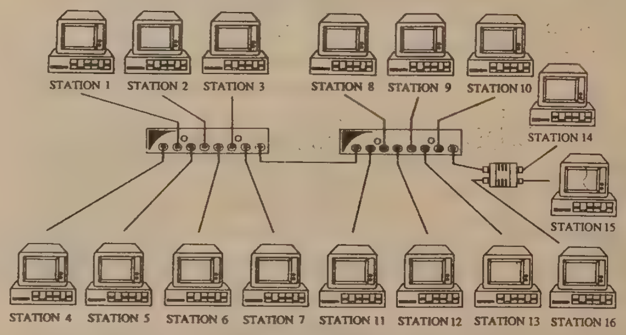

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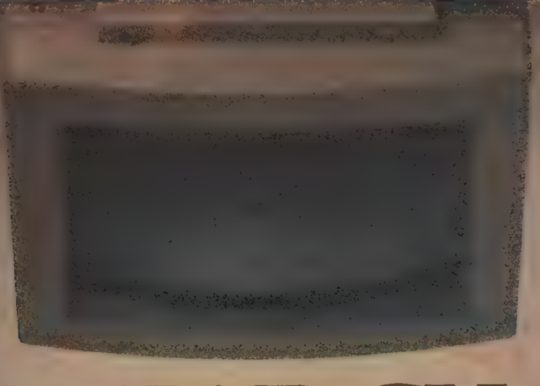

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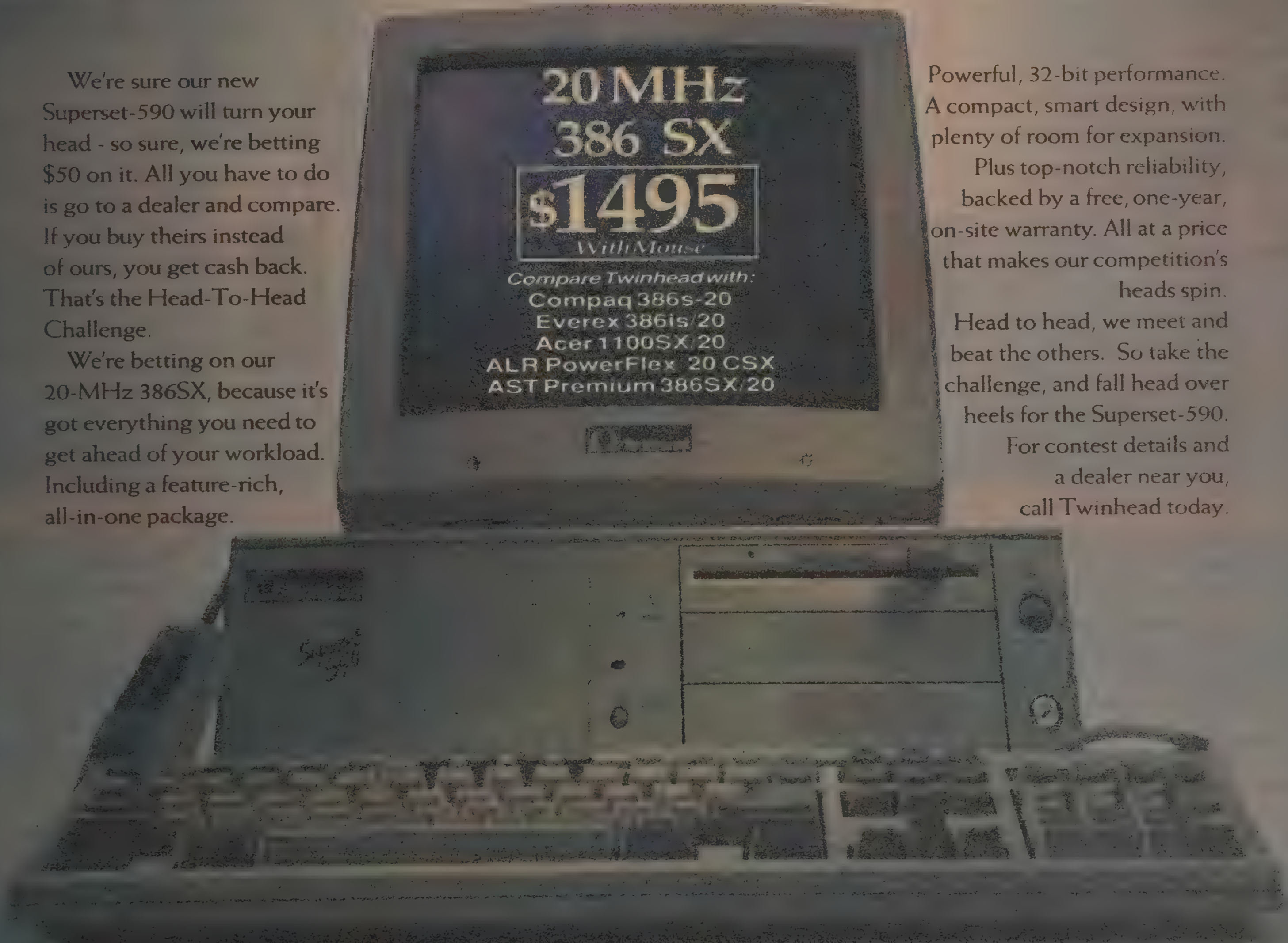

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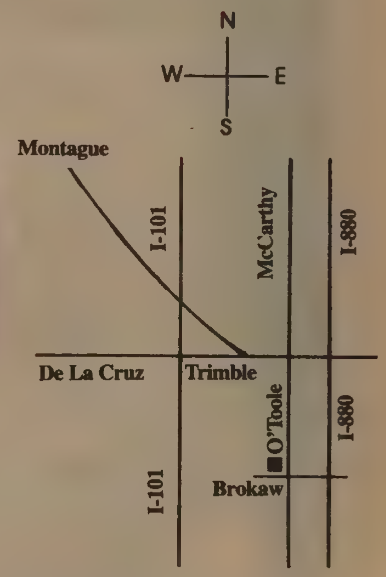

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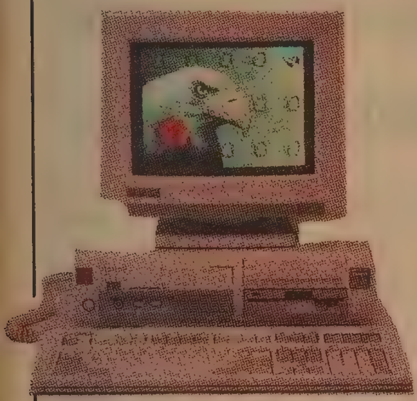

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The first two photos were of the Franklin printing press and a communications satellite. The first chapter concerned news gathering. It highlighted "... pitting freedom of the press against privacy rights and national security interests...," and discussed press use of networked databases for researching, investigating, and "drawing out latent connections between people and events...".

Next was an entire section on "media satellites," stating, "... [Some] believe that the press will soon want to own and operate their own remote sensing systems dedicated to newsgathering..."

The section thereafter, captioned "Implications for Privacy," *only* dealt with the press infringing personal privacy and organizations' confidentiality, with "Implications for National Security" being the next section. There was lots more.

As I said, emphasis was as interesting as content. Curiously, no more copies of this 1988 report seem to be available—either from OTA or the Government Printing Office (GPO).

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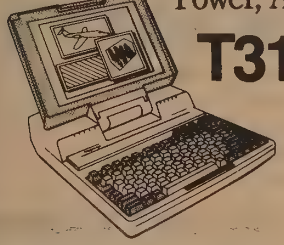

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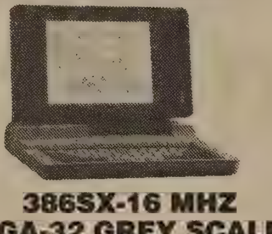

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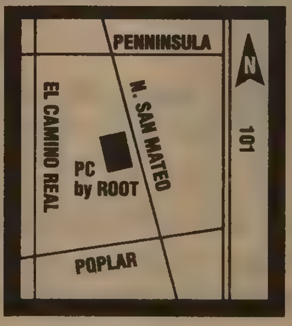

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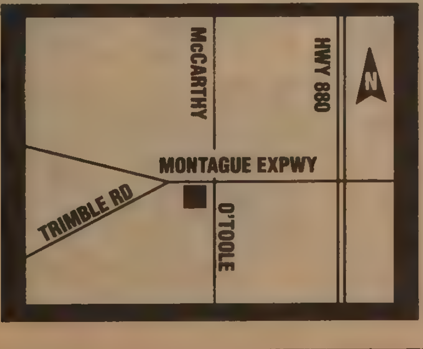

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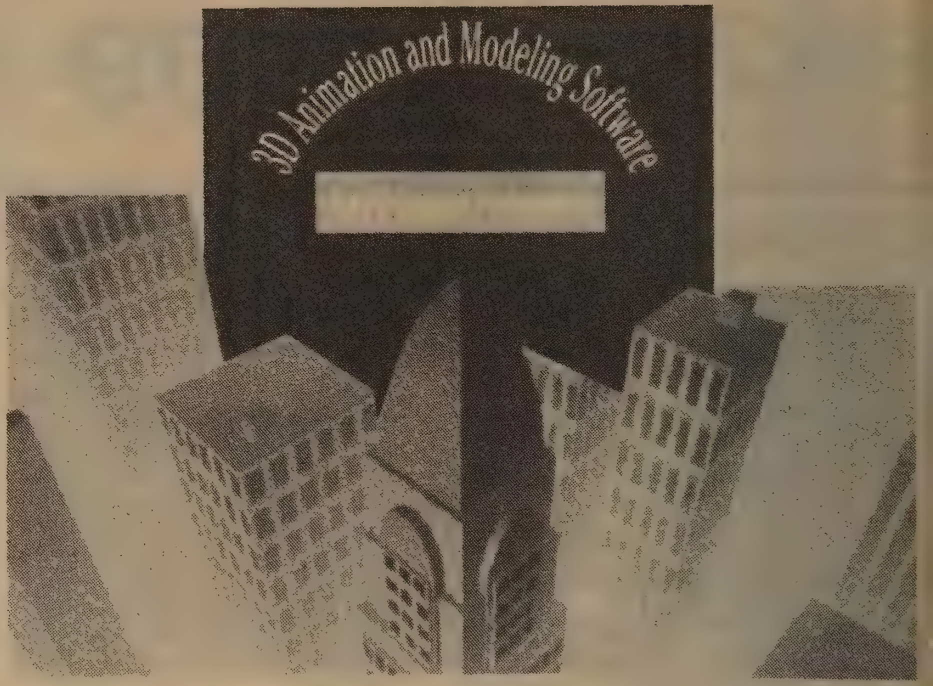

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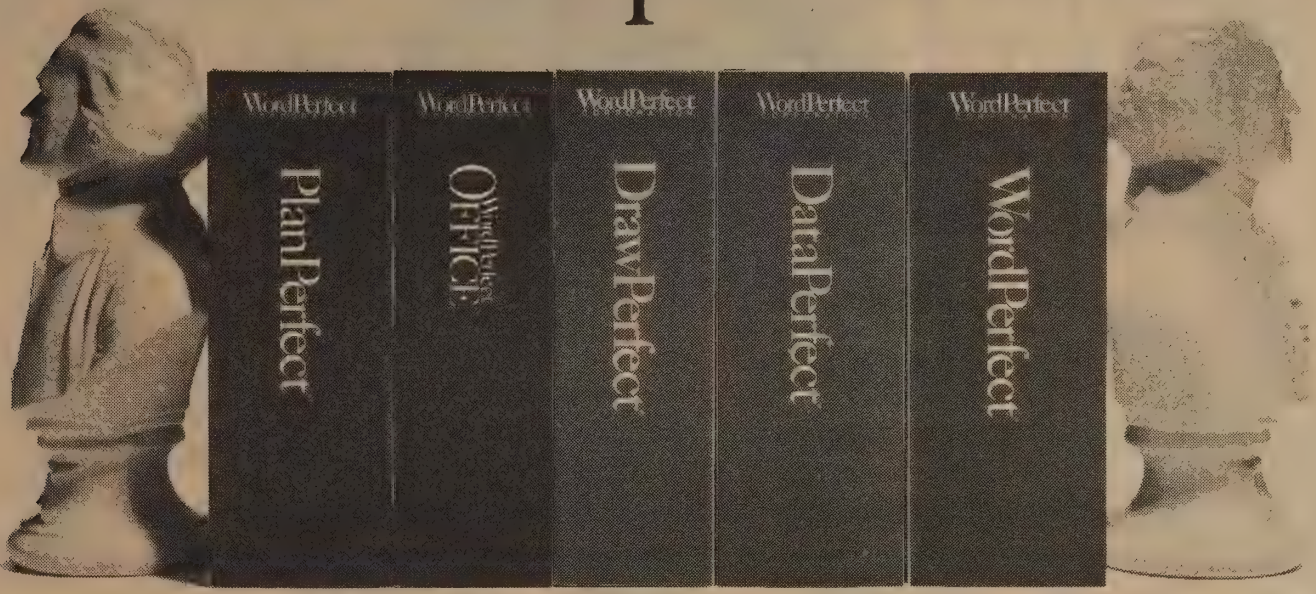

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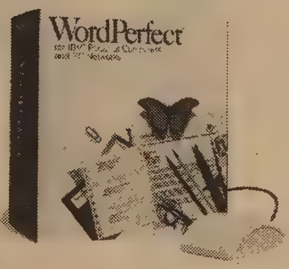

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Another Side of Bill Gates

STORY BY
JOHN PERRY BARLOW
PHOTOS BY
MICHAEL JAY

Even in an industry characterized by the irregularity of its tycoons, Bill Gates stands out.

While there is no truth to the rumor that Bill is actually short for Billionaire, Gates is, by an absurd margin, the most financially successful of all digital entrepreneurs. In the fifteen years since he dropped out of Harvard to get involved with the first personal computer, the MITS Altair, and later founded Microsoft with boyhood friend Paul Allen, he has turned the latter into the largest software producer in the known universe. It commands a near-monopoly in microcomputer operating systems as it produces a highly successful and diverse line of applications. And, like the industry it squats magnificently atop, it is growing like kudzu.

Unlike most of his early colleagues, Gates has not fallen victim to what sometimes appears a necessary ritual of corporate development beyond a certain scale—excision of the hacker founder. Many companies come to resemble their market more than their maker, but Gates has managed to hold the lead throughout his long waltz with the most formidable partner of all, IBM.

> **Barlow on Microsoft's chairman: "Bill Gates may be the smartest man I've ever met... at least in terms of raw MIPS. This CPU has a very fast clock rate."**

And, while his thick horn-rimmed glasses no longer require white tape, he remains, at least in personal style, the quintessential nerd. He rocks rhythmically back and forth when he's impatient. Which he is a lot. He has a kind of *Boy's Life*-gone-Dada sense of humor. He has an exploding cowlick which would have worked well on a character from *Our Gang*. America's richest self-made man under 40 appears barely over 20 and remains, well, kind of cute.

There is nothing cute about his mind. Though I've led a life blessed with the frequent company of stellar intelligences, I would still say that Bill Gates may be the smartest man I've ever met... at least in terms of raw MIPS. This CPU has a very fast clock rate. At arm's length, you can *feel* it working.

In my previous exposures to Gates, I found myself irritated at the purposes to which he applied all this cerebral horsepower. In public at least, he used it to construct The World According To Gates, a vast creation of complex self-reference into which one could hardly insert so much as a toothpick of doubt. In press conference after press conference, I saw him allege with bland opacity that whatever interpretation of reality might serve Microsoft was somehow True.

OS/2 was a huge success, he said. The alliance between IBM and Microsoft was unassailable. Customers found no important difference between Windows and the Mac interface. It took me a while to realize that, on some of these occasions, he was the only person in the room who didn't think he was slinging it.

The worst thing about it was that it worked! The official Reality of Microsoft occasionally must go through Orwellian shifts, but it does so with great suppleness. The difficulties of OS/2 are suddenly insignificant beside the explosive (and somewhat puzzling) success of Windows 3.0. When Word 4.0 for the Mac came out a year late, almost everyone who, in the meantime, had purchased FullWrite or Nisus, grudgingly sent in their $75 upgrade fee. And Microsoft, for a company of its size, seems strangely human. Obviously, there is a lot more to Bill Gates than self-deception.

Watching Gates in action left me with mixed feelings about wanting to interview him. On the one hand, he is, without any question, extraordinary—the most powerful, and possibly the most resented, individual in the computer business. On the other hand, the possibility of getting an answer from him which didn't represent the party line seemed slim. My editor thought it even less likely than I did.

Nevertheless, I overcame her doubts and enlisted her assistance in getting me together with Gates. I even managed to drag her along as we met him in the shaded-solid heights of the San Jose Fairmont on the opening day of the Seybold Conference.

He had been on a panel earlier that morning with John Warnock and Steve Jobs. The panel was another episode in the soap opera which began at the previous year's conference, when Gates announced his alliance with Apple to create a font and page description standard to compete with PostScript.

I wasn't encouraged by what I saw. Questions directed at Gates by Jonathan Seybold and from the floor had disappeared into a dizzying welter of elaborate, self-justifying obfuscation. One might as well debate a dust devil, I thought.

Fortunately, the person I encountered upstairs was both more human and more forthcoming. He is a slippery fellow to be sure, and his sense of aesthetics and design is very different from mine, but I came away both respecting and even *liking* Bill Gates.

We began at odds:

That was an interesting thing Steve Jobs said this morning, calling NeXT the BMW of the business and Microsoft the General Motors.

What do you think about that?

Hm…The analogy doesn't quite hold up, because in the case of BMW and GM they run on the same gas and they drive on the same roads. And so somebody could get up who runs high end 486 machines with lots of memory and disk…say, a Compaq—could get up and say they're the BMW, and then Acer could get up and say they're the GM, because they're talking about the same roads, the same applications, the same disks, the same gas.

In Steve's case, he's saying, "Hey, we're going to lay down a whole new road system, and a whole new user interface, a whole new set of training," so the analogy's not quite the same.

Barlow: "How would you define your sense of mission?"

Gates: "The PC is the tool of the information age. A personal computer on every desk and in every home. Using great software. And software standards as a way to make that happen."

They say he sold ten thousand last year and DOS was about fifteen million, so that's a little higher volume ratio—I mean, I don't want to denigrate GM or anything…

Maybe the DeLorean—

Well, even the DeLorean drove on the road. It used gas, as far as I can remember. Clive Sinclair had an electric car, so that's different.

Hey, Steve's stuff was nice. That was a nice demo. And if I thought that stuff could only be done on his machine, I'd be saying, "Hey, it's going to be like a Mac. It's going to sell pretty well." But the real question is, can we do those things, which are cool, and have compatibility with all the applications, the so-called mainstream stuff that's out there? And my proposition is, you bet. No problem.

So you think that Windows can have the same kind of elegance of execution, ultimately, that the Mac and the NeXT machine did.

I don't know why you say "ultimately."

Well, now we're talking about matters of taste. But when I use Windows, it doesn't feel as fluid to me. I don't think there's the same degree of intuition built into the system that there is with the Mac, which is what I ordinarily use. And based on what little experience I have with the NeXT, the same applies there.

Do you use applications at all?

Yeah, I use yours, largely.

Then it's hard to understand why… When you're inside Excel, how do you know which machine you're on? How do you tell? Do you keep looking at the logo and saying, "Mm. Not as elegant. Not as elegant"?

Is it the logo that kind of sets you back?

No, but whenever I want to copy a file, or leave the program, or get back to the operating system… You're quite right that in Excel…

You're saying the shell, it's something about our shell you don't like.

It doesn't have the same kind of fluidity of feel to me.

Have you used 3.0 much?

Yeah, but as a Mac user I wouldn't claim that I use it all the time. Perhaps I'd get used to it. But I didn't feel as comfortable with it.

Well, the first graphical system you get involved with, just like the first editor, the first spreadsheet, you get very used to, so if you've been used to using the Mac, I say hey, keep using the Mac. Mac's a great machine. Apple's going to keep improving it.

If you first use Windows, and then you move over to Mac, you'd say, "Hey, where's dynamic data exchange?" Where are a lot of facilities that Windows has, things you've gotten used to in that environment? All I can say is, these questions are often decided in the marketplace, and Mac is quite successful and Windows is quite successful, so clearly there are people picking both of those things. Those are the two mainstream standards on the desktop that we're going to support very aggressively with applications.

Do you think that the marketplace optimizes for ease of use?

What do you think it optimizes for? It optimizes for the best product. I mean, it's a free country. People buy whichever product they want…

If the marketplace optimized for ease of use, then, for example, Excel would've long ago started outselling 1-2-3, and the Mac would have long ago outsold DOS.

Well, it's just not true that…there's a tendency to underestimate the benefits that the breadth of DOS applications brings. That breadth of applications is a real benefit to people. Ease of use has to do with—go over to your colleague, exchange a diskette.

Do you think carrying that machine around [Mac Portable]—you call that ease of use? So in that sense, DOS is far easier to use. There's only thirty guys you can choose from who make machines a third the weight and more powerful than that, and less expensive, and that's a form of ease of use.

And 1-2-3, if nine of your colleagues are using it, the easiest thing for you to do in terms of getting support and exchanging data is to use 1-2-3. So I think, yes, it's driven by ease of use, in a very fundamental way. And that's why Windows lets people keep running their DOS applications, and lets people do data exchange with those applications. Ease of use is the criterion; we have to be careful not to define it in terms of our own biases and our own experience, because everyone gets focused around a particular set of things based on how they learned this stuff to start out with.

But my proposition would be that, hey, Windows is an important standard, and yes, we're going to keep pushing it forward. I react negatively to your comparison, because in many ways the Mac is better today, and in many ways Windows is better today. They both have a bright future, a lot they need to do that they don't do today.

What about NeXTstep? To answer your statement that the Mac is what I'm used to, I'm seriously considering going out and buying a NeXTstation just because I like the operating system as it's advanced in 2.0. It feels very easy to use, easier than the Mac and more elegantly worked out. Do you think there's the possibility that other people are going to have that response to it?

Not enough that I've chosen to write applications for the machine.

Betting on platforms—I'm paid to do that. I bet on the Macintosh, Lotus did not. Ashton-Tate did not. WordPerfect did not. I believed in it. Steve brought the company, we kept working on our Mac applications. We think it's a very important platform and we're going to keep

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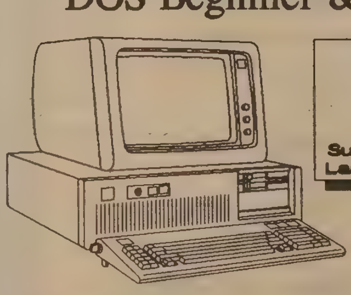

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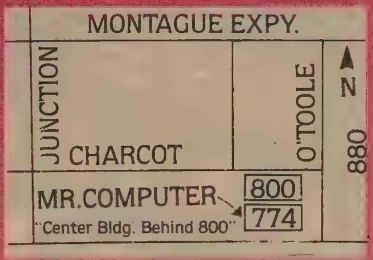

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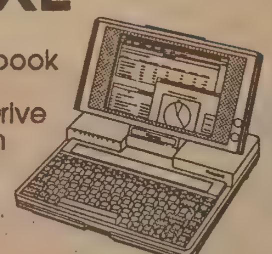

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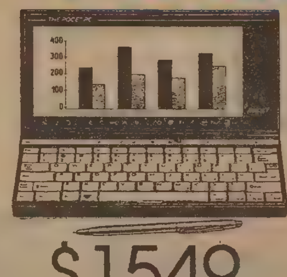

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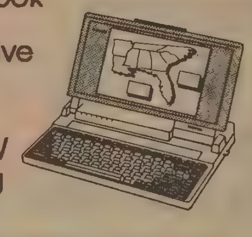

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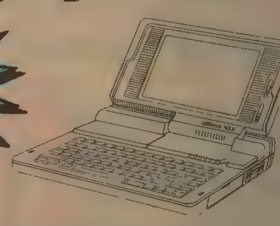

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doing that. On some of these other platforms, of which a new one comes up every month, we've chosen not to, because we want to do the best we can on Windows, Mac and OS/2. Those are our three primary platforms. If I thought something was going to sell at the level of the Mac, then it'd be worth diverting some resources to work on that. As yet I just haven't made that decision.

Wouldn't you say that your development on the Mac was worthwhile even when the Mac was a very minimal part of the market—which I guess it still is—because of the development practice it gave you for graphical user interfaces?

> Gates: "The benefit of being able to exchange applications and exchange data is immense. As long as we can provide all the new things in an upward-compatible fashion on top of the PC standard that's been so valuable, that's what people want to stick with."

Actually, that's true, but it's also a very profitable business for us, selling Mac applications. There are a lot of user benefits because of the cross-platform compatibility you get using Word on the two platforms, or Excel on the two platforms. But even taking it by itself, it was a very, very good decision.

It seems to me that what the NeXT offers, and what Sun is starting to offer, is the opportunity to develop for a network...for real groupware. Whereas using even Windows on top of a Novell system doesn't have the same kind of interoperability...

What do you mean? I mean, those are just words! Have you used Lotus Notes?

Yeah, you're right. Lotus Notes is a good program.

But interoperability? The bits don't move, somehow? When Steve says move, the bits move, and when I say move, they don't move? I mean, let's be serious. We have more interoperability than they do. This is the way networks are built. You have this thing called NetBIOS, you can take bits from any machine to any machine. Seems to work for nodes, seems to work for InfoAlliance, seems to work for file sharing, seems to work for LANMan, seems to work for Novell. There's nothing there—there's no fundamental piece that's letting people do cooperative applications on those platforms in a way they can't on the mainstream platforms.

So you feel you're going to be able to develop groupware under Windows on a Novell network as well as they can do it with UNIX as the background.

Well, for client-server you need a general purpose operating system running on one of your servers. So you can keep your Novell servers and do file sharing with Novell, but Notes requires an OS/2 server, InfoAlliance requires an OS/2 server, FileShare requires that, SQL Server requires that. So somewhere on your network you need to get an OS/2 server. But the best intergroup applications are being written to our platforms, for good technical reasons as well as the opportunity to sell them into the real world.

John Markoff [of the New York Times] asked you a question down at Stewart Alsop's conference which I want to repeat because I thought your answer was interesting: Do you see a possible Balkanization of operating systems based on products from various companies, whether NeXT or Santa Cruz Operation or whomever, coming in and competing on the same platforms with you?

No, the benefit of being able to exchange applications and exchange data is immense. As long as we can provide all the new things in an upward-compatible fashion on top of the PC standard that has been so valuable, that's what people want to stick with. Go ask end-users, if we can evolve in the right stuff, if that isn't the best approach for them. Go ask software developers, if having this mainstream DOS platform hasn't been the best thing for them in terms of developing the application once and selling it to that large base of people. Go ask Egghead if they want to buy stores five times as big just to inventory software just to sell as much as they are today. There's no reason for Balkanization—the standard had a merit of its own.

Manufacturers didn't want to see one standard develop—DEC had their own PC, TI had their own, Wang had their own. Even IBM persists in the notion that theirs is becoming the model by which compatibility was defined. They didn't aid and abet that—we were the ones who went out, licensed DOS to a lot of people. Intel made the chip available to a lot of people, and this standard was created. And that's what allows some new software company to come in, write an innovative application, and see those fifty million users out there as a potential base to sell to. If things were Balkanized, you wouldn't have great software. It wouldn't hold up.

The strength of the PC standard is greater today than ever. It's only within the industry that you see this thing about "Oh, that one's cute, maybe some of those would sell"; "Oh, I like that neat feature there, maybe that one'll sell." You could say the same thing about spreadsheets—I can't tell you how many spreadsheets with cute and neat features have come along, and yet what does it come down to? There's Lotus, and there's Borland with some staying power, and us with some staying power, still a fairly small part of the market. So cute stuff doesn't make it. People want real standards.

You said something intriguing this morning about the positive feedback loop that one gets into by being there first and establishing a high degree of presence in the market. Do you think that that's why, as you say, cute spreadsheets have not been able to make inroads against Lotus?

If you get in there first, you get training classes. People understand it. Data files, add-on software, books—people's fingers just start to work a certain way, and that's momentum. It takes something really radical, a big step forward, to break that momentum.

Excel's been able to capture some market share, but the biggest problem is that the graphical interface wasn't mainstream under DOS. On the Mac we have some huge market share, because the graphics interface is mainstream and we were the first spreadsheet. On DOS, as long as GUI was niche, Excel was niche—and pretty darn good niche. Credible in a lot of leading-edge places. Now that GUI is mainstream, Excel has an opportunity to really break out; in fact it's very clear that unless Lotus gets a Windows product out very quickly, and it's a great product, Excel's going to take a very strong position. They know that, they're doing their best. That's healthy competition.

Being there early—if the guy who gets there early does a good job, it blocks out all but the generational improvements from having influence.

This makes me think about Adobe. What I heard John Warnock saying today was that he was proposing PostScript as the new ASCII, in essence. If he were to prevail in that, wouldn't it make it easier for people to have a lot of different operating systems, because truly dense data would be very portable from one platform to another?

Well, operating systems run applications. Unless there's a standard for memory management, multitasking, threading, file systems, protection, all those tricky things, you're not going to have commoditization of operating systems, because operating systems aren't steady. John himself acknowledged that the most important standard is not the type he's talking about, flat data standards, but rather the object message standards. Those are going to be the ones of greatest importance.

So what he's doing is backing this thing where you have specific encodings. Lots of important stuff now is where you don't actually look inside the data, but you agree on some messages about data. And that's one of the innovative things we're doing in our operating systems. It's a state-of-the art thing; many people do it, some of them look better than others, and it's not good to try and say, okay, we'll all do it exactly the same way. Because of the position of our operating systems, I think ours has a chance of having some real impact.

> "It's exciting to be involved in building tools that I think can make jobs a lot more interesting. I think this information age is a good thing. I think it's empowering to the individual. I think it makes the world a richer place."

Because of its established institutionalized market share?

And because I think the work we're doing is great. Good combination.

Before Windows 3, when the future looked to be OS/2, I had a developer tell me he knew there was going to be a huge market, because it was a Microsoft product, but he didn't want to go to the trouble to develop an application for an operating system whose development manuals started out weighing more than he did.

What about ease of development? If other operating systems become easier to develop for, doesn't that put Windows in a disadvantageous position?

Thank goodness that's not true.

You think Windows is easy to develop for?

I don't think any operating system is easy to develop for.

It's easy to develop easy applications, and inside a corporate setting, that's great. You can take a tool like ToolBook or Excel or Choreographer or Easel—there's an immense number all available under Windows to write easy applications. Those are great things inside corporations.

But if you want to compete and make the best desktop publishing package or the best word processing package—let's not joke around. I don't care whose operating system it is, you're going to have to get your hands dirty and write some hard code and try and make it fast and do a great job. It's very, very competitive, and nobody can tell you that it's going to be easy to write a winning application in their environment.

We do lots and lots of things to make it easy to develop for Windows, in terms of coming out with better tool kits and even better tools coming along. People see the opportunity—they say "Hm, there could be better tools for Windows," and they write them. They sell them. Borland's going to be coming along with some stuff, we're coming along with some stuff, and tons of startup companies are doing and have done great work there.

You told me in Laguna Niguel that you didn't consider Windows to be a tactical retreat from Presentation Manager, and yet it seems you're not quite talking the same line that you were a year or two ago when you described a future based on OS/2. Now you seem to be talking about a future being based on Windows.

Well, Windows will run on OS/2, and so OS/2 is the future. That's unchanged. Running the Windows APIs on top of OS/2, that has increased in importance to us, making it easy to move up from Windows to the more advanced OS/2 kernel.

But we have been totally sending a Windows message from 1983. IBM wasn't sending a Windows message because they hadn't licensed it, and so a lot of people said, "Okay, Microsoft says Windows now, OS/2 also important. IBM says OS/2." Hey, the ones who think IBM primarily sets the standards by itself, they probably said, "Oh, let's go with OS/2."

The people who looked at what we were doing—and this includes Lotus, WordPerfect, Software Publishing—we said, "Hey, our applications group is in Windows now; we've always been totally open about that; we think it's the best strategy, start there." Some did, some didn't. And given the success of Windows, the people who did are enjoying some volume sales because of that. The other people are coming along. There's nobody who's holding out. I don't know any significant developer except maybe Claris who isn't developing Windows applications.

Just out of idle curiosity, why did it take you so long to move Word to Windows?

It's a lot of work, and you want to come out with something new. Actually, the idea of tables being in a word processor I came up with for Word for Windows five years ago, and so that's how long we've had the project. We invented the ruler and the ribbon four years ago, the idea of putting the most recently used files on that file drop-down, the idea of command wells four years ago—by the time we finally shipped the thing, I'd forgotten all this cool stuff we'd done. Then I went back and started using it a lot more, and I said, "Yeah, it's impressive that the stuff we thought of so long ago is still pretty innovative."

Tables actually showed up first in the Mac product and were very well received, and now everybody's got to have tables. But that was a first, and I think we did it in a pretty nice way.

It does take a long time to get the right speed and the right usability and make sure you're not just porting... We have a great word processor in character mode—why do Windows Word unless it's a big step forward above what can be done in the character world?

You were talking about things that you personally did, and I was thinking this morning that, of the large companies, you and Warnock are the last engineer CEOs. Do you still have the opportunity to exercise your skills as an engineer?

Absolutely. In terms of the design of the product, the algorithms, that's what I enjoy the most.

You'd also have to put Philippe Kahn on that list—which was started

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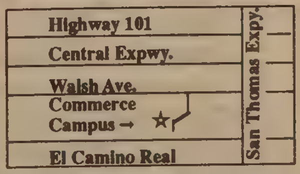

first, Adobe or Borland? Borland, I'm pretty certain.

> "Let's say I raised the prices on DOS. I'd lose market share very, very quickly if I did that. We need to price the stuff very aggressively and come up with more upgrades."

Borland was started in a lot smaller garage, so it went unnoticed for longer...

Well, he's better at glamorizing his beginnings than the rest of us.

Well, he has easier beginnings to glamorize...

No. Dropping out of school when there was no industry to go to MITS? They have no money, they're a bankrupt company, they don't pay us, we're staying at the Sundowner motel... We grew out in the country. The Homebrew Computer Club—who started that? We went out in the MITSmobile, got those guys together, we had all these materials to hand out about how to start users' groups. The power in the MITSmobile would knock everything out, they stole the paper tape of BASIC, everybody was stealing our BASIC, we weren't even making enough money to even fly home... I wrote this letter to *Computer Hobbyist* saying, "Hey, you shouldn't steal software."

That's when Philippe was still a math student in France and Steve was off in India trying to be cool and Warnock was in his cushy laboratory at Xerox. We all have good stories.

Yeah, it's totally false to think of your beginnings as being with IBM.

Absolutely not. I had much higher market share in this business when IBM came to me than I have today. I mean, maybe I would be better off if they didn't come to me. I've just lost market share. It's been a *disaster!* What happened?
[*laughter*]

There's a strange thing. From '75 to '80, what were the dominant machines? Apple II with our BASIC. Radio Shack with our BASIC. Commodore with our BASIC.

CP/M was actually a fairly small part of the market; it was an interesting part that we participated in, but we were the ones that adapted CP/M to different people's machines. Digital Research didn't like to get their hands dirty, so we did all these adaptations.

What was the most popular form of CP/M in all that time? It was a product we did called the SoftCard. We were [DR's] Gary [Kildall]'s largest licensee with a Z80 card that plugged into the Apple II. So the role we played then... there weren't many people. We had a much stronger position.

When IBM came to us, they came to us because they wanted to get something done quickly, to prove that they could get something done in a year, on this machine where they had a 20,000-unit forecast. So they wanted to do an 8-bit machine, stick our BASIC in there, and prove that at least they could get that done. It was our fault that it became a 16-bit machine and we were forced to write a whole new generation of software. And were able to use that as the foundation of

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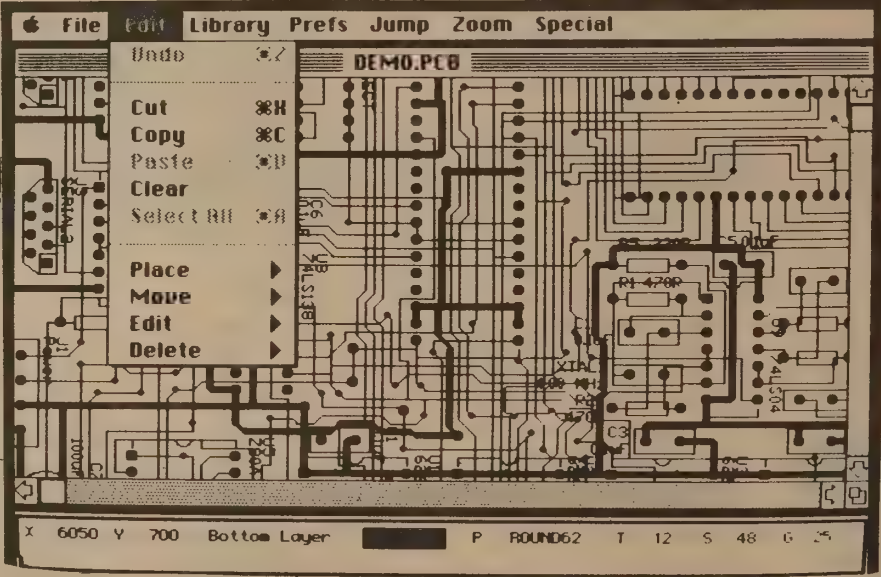

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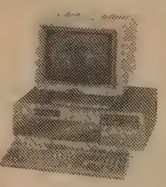

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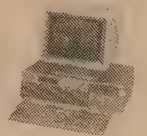

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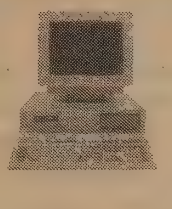

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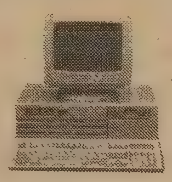

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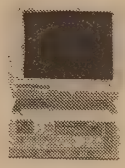

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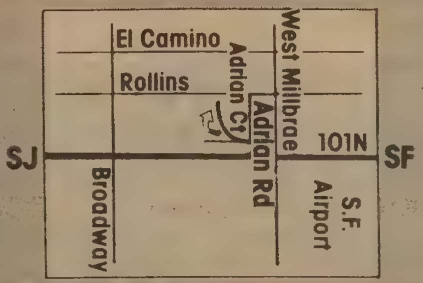

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Well, the engineer on it was actually open-minded to this change. They kept asking us to do comparisons to the Apple II, and we kept saying, "If you go 8-bit, that's not something new." Intel bid the 8088 at a very low price, which was critical. There were a few guys on the project—they had thirteen guys in total—who wanted to put the diskette in. Once you got the diskette in, then we were golden. Because once you get the diskette in there, we could prove to them you need a DOS, you need more than BASIC, and sure, BASIC can be in ROM, but the DOS is the key thing...

It's a long story.

When you first dealt with IBM, was it your intention to write your own DOS?

No, that's this long story. They came to us with an 8-bit machine with crummy graphics and wanted BASIC. We said, "Don't use the 8085, use this 8088 thing." I said, "Oh, there's this company called Digital Research," which they'd never heard of.

I called up Gary and told him these guys would be coming down. So they flew down, Gary wasn't there, Gary's wife wouldn't sign the nondisclosure agreement for them...

So you actually sent IBM away?

No, no, no, no. We said okay, we'll do all the languages and everything, but let's go see...

Gary hadn't done a 16-bit version. The only 16-bit operating system at that time was a thing that Tim Patterson had done called QDOS, Quick and Dirty DOS.

Anyway, so then Gary wasn't that interested and we decided that it was a mistake, that given the tight time frames and the central position of the OS, we should do the OS ourselves. So we told IBM, "Hey, don't worry about it, we'll do this." So we went from agreeing to do 200,000 new lines of code to about 230,000 new lines, then we bought QDOS and hired Tim Patterson from Seattle Computer Products. And Tim came over and Tim and three of our guys did DOS version 1.

Then, late in the game, about four months before the machine ships, Gary said, "Hey, IBM, you've got to include me." So IBM said, "Okay fine, we'll ship CP/M 86 also." So he did a packaged product with CP/M 86; he chose to price it very high. We went around to the ISVs and tried to get them to favor us. It took 2 1/2 years, including backing by Wang, Zenith, Victor (long forgotten) in order for us to establish an edge.

And once you get an edge...

Positive feedback loop!

I mean, we had Balkanization. It was beautiful Balkanization—we had three operating systems, we had DEC with a better keyboard, TI with better graphics, all this Balkanization.

And what did the marketplace do with all this Balkanization? They just kissed it goodbye.

You're right. People want a standard. They want familiarity.

And will it come back? I don't see what would cause it to come back.

I mean, fundamentally you just have to ask yourself, is there anything you're seeing on any of these non-PC machines that can't be done in a great way on the PC? And get rid of your sentimentality.

There are mysterious aspects of execution that I have a hard time defining but nevertheless I know they're there. It's kind of like Zen and the Art of Motorcycle Maintenance—you don't know how to define quality but you know it when you see it.

You're kind of an insider.

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based on the familiarity of the product. If you have a large name recognition, then people buy it.

I want to back up a bit—there's a possibly mythological notion that a lot of DOS was already intact when you bought whatever you bought from Seattle Computer Products.

Tim was the primary author of DOS version 1. Of what we shipped in DOS version 1, Tim wrote the majority. But he was an employee of Microsoft when he did most of that work.

The stuff that we got when he came across—there were some real shortcuts in QDOS. But by the time we shipped it was a pretty good product. We had to write a dramatic amount of new code to do MS-DOS version 2. Tim participated in part of 2, and then he went and did a compiler after that, and 3 he was not involved in. 4 was work done primarily at IBM, and for 5 Tim's been off working on other stuff.

This makes me think about your version of OS/2 and IBM's. Do you see OS/2 2 and OS/2 3 developing into completely different systems eventually?

No. Absolutely not.

They're bound to be similar all the way to the fifth edition, sixth edition at least?

When 3.0 comes out it replaces 2.0. It replaces 2.x. Throw it away. Give me a point in time, and only one of them is important. Before 3.0 ships, until 2.0 ships, 1.x is important. When 2.x ships, 2.x is important. When 3.x ships, that's what's important.

So you're working on version 3 now, IBM's working on version 2.

Well, that's too strong a statement. There are IBM people at Microsoft working on version 3. There are IBM people at IBM working on version 3. The majority of the people are at the primary site, which is Microsoft, and the majority of those people are Microsoft people. I have about forty people at Microsoft who are working on 2.0; they spend a lot of time at IBM, helping out with 2.0. There's a lot of coordination with what's going on with 2.0. Whereas before it was 50-50 across the two sides, now we have this primary site concept. So both companies are not only fully licensed for everything that gets done, we're very involved in everything that gets done.

Mitch Kapor said that we're well into the computer age and we still haven't seen our Henry Ford yet. While that may be true, I think it's possible that we have seen both John D. Rockefeller and Standard Oil...in the form of you and Microsoft. What do you think about the possibility that Microsoft is going to be the Standard Oil of computing in the 21st century?

That's a pretty nasty question.

I didn't mean it to be a nasty question. I don't mean Standard Oil as a golemic kind of—

What else could it mean?

Well, it means a very large, efficient—

Monopoly. What was efficient about Standard Oil?

It worked extremely well. It was so efficient that it took the government to break it up.

A monopoly that controlled the transportation.

I don't see any analogy at all. All the businesses we're in are very, very competitive. Word processing. Networking. When I name one that's not competitive, tell me. Spreadsheets.

Operating systems.

Operating systems is very competitive. There's very innovative work going on—Digital Research, see their ads, see what those guys

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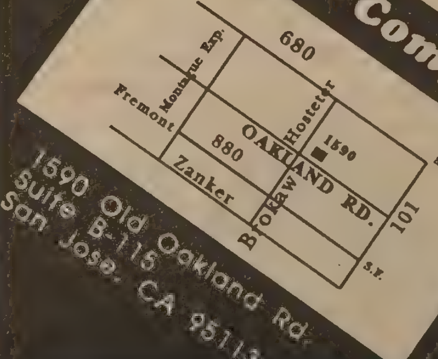

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are doing. See what hundreds of guys with UNIX are doing, whether it's Mach or Open Software Foundation or Santa Cruz Operation.

But expressed in terms of market share, they're not competitive. I get the impression that your sense of competition is based to a very large extent on market share.

No, no, no. Let's say I raised the prices on DOS. I'd lose market share very, very quickly if I did that. We need to price the stuff very aggressively and come up with more upgrades. That's the reason we're putting resources in this new version of MS-DOS as well as some new versions of Windows.

I've always been aware that the operating system is the one we have the largest market share in. I think if there's a Model T analogy, it's—hey, MS-DOS machines, we've got hundreds of manufacturers building compatible machines. Which meant that in terms of variety of choice, you could choose your hardware and still run the same software. That, to me, is a fundamental contribution. It creates a standard which led to a very large market. If Ford made a good contribution to the car industry, it was that they decided to do something to create a very large market, to prime the pump, to make the product of interest.

And I think MS-DOS—it's our product, but you've got to give credit to IBM and Compaq and Zenith and all those other companies and the software developers who came and got behind MS-DOS. They made that a standard, which made a real difference. We wouldn't be very far along if we didn't have that as a basis to build on.

If IBM had never decided to build a PC, would DOS have been a standard?

You bet. We would've picked another machine as the model for compatibility. It's a natural thing.

We wrote back in 1975 that we wanted a binary standard based on one instruction set. The level of interchange we had from '75 to '80 were programs written in Microsoft BASIC, so we could get people to write accounting packages and books of games. If you learned our BASIC, you learned our BASIC. That was a certain level of exchange.

But we knew from Day One that was inadequate. Well, in the 8-bit era, not only did we have a shortage of memory, we had the 6502s, Z80s, 6800, we had this multiplicity of microprocessors. We saw the 8088 as an opportunity to change that. In fact the IBM PC was not the first 8088 machine; there was a machine we did from Zenith and Mitsubishi before that.

So we did push for that standard. IBM, you know, they didn't make it happen—they went and sued a bunch of guys they thought had taken short cuts in building BIOSes and things like that.

It helped to have a strong company for other people to model the standard around. And we would have had to pick DEC or HP or who knows? We're now getting into hypotheticals.

Back around 1980 or '81 I decided that I wanted to buy a computer. And I looked at what was available, and figured that I would wait until IBM produced one simply because I wanted something produced by a reliable organization. And it seems to me a lot of people made that decision. People who didn't want to buy Apples. Didn't want to buy Victors.

Of the DOS market, IBM has about 30%. So obviously there are people like you and there are people not like you. IBM has played a very, very important role and done a very good job.

Well, I'm just thinking about operating systems. I knew there were a lot of different operating systems, I didn't know one from the next. IBM, I figured, would define that standard.

No, no. Until we got the hardware standard out there, we couldn't have the binary compatibility. The operating system is a piece of that.

Believe me, when they introduced the PC, there were three oper-

Continued on page 106

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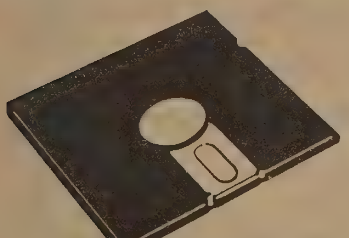

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ating systems on there, and they laughed—do you favor one of these? Do you promote one of these? They were very even-handed.

What was the third one?

UCSDP system. Actually it was the only system they offered on their DisplayWriter. So there were cross-product operating systems.

Do you have a sense of mission?

Yes.

How would you define it?

The PC is the tool of the information age. A personal computer on every desk and in every home. Using great software. And software standards as a way to make that happen.

Why is that a good thing to happen?

That's a theological question, and some people might think it's a bad thing. Hey, there's lots of ways to look at these things. It happens to be that I enjoy working on that mission, I've been able to gather a lot of smart people around, it's been a lot of fun. That's what I'm doing. People can decide if they like it or not.

There's obviously a lot of nonsense that gets crowded into the ideology of personal computing, but a lot of the people talk about it in terms of what it's going to do for society or what it's going to do to human interaction. You have strong feelings about that?

Yeah, I think it's very positive. I look within our own company, at how people have ideas. By having access to information they can send mail to me or to anyone, they can challenge things. What used to be areas of specialization—are you thinking about the manual, or thinking about the testing?—now it's everything online. You not only can do things quickly, you've got people, you get to tap into more of their creativity. It's like they know what's going on, how their piece fits into that whole.

It's exciting to be involved in building tools that I think can make jobs a lot more interesting. I think this information age is a good thing. I think it's empowering to the individual. I think it makes the world a richer place.

Everybody can decide for themselves. I happen to think it's a good thing. It's not just that I enjoy doing it—according to my theology, it's good.

Speaking of organizations, I see your company as being highly horizontal and based on email. I see Apple being highly horizontal and based on email. And yet it works for you and doesn't seem to work for Apple. Why do you think that is?

I'm not an expert on Apple. Apple's a very successful company. They're a different company than Microsoft. They've had more turnover in their executive ranks. And for whatever reason that is, I know that it's helped us a lot to have incredible stability in our executive group.

We go out on retreats at least a couple times a year, and we talk about "Jeez, what are we doing in mail? Do we need to get into the consulting business? How can we work with the channel? Is our development approach state-of-the-art? What about our image—Big Is Bad—what can we do to show the good things we're doing? How to work with developers?" We go out and brainstorm about this stuff, and we love...Microsoft culture is we don't talk a lot about our successes, we talk about the things we're doing that we should do better.

From a distance, it looks like Microsoft is more of a tribe and Apple is more of a machine, in the sense that Microsoft has a mythic leader in the form of you, and Apple doesn't have that.

Continued on page 260

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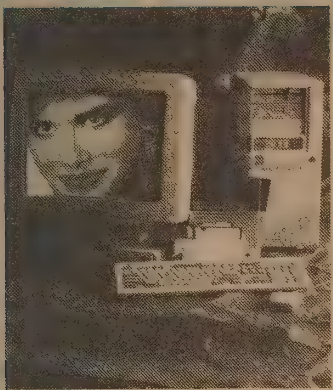

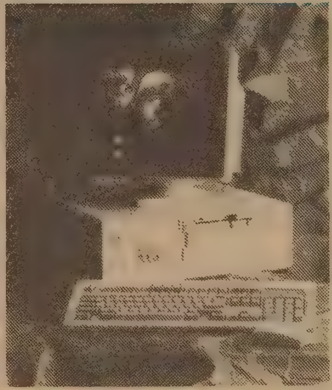

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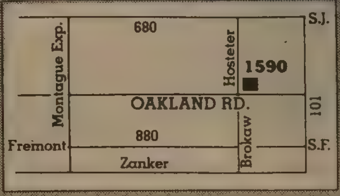

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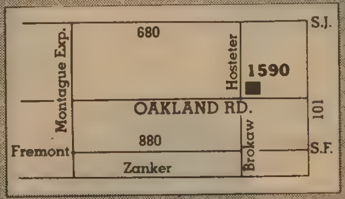

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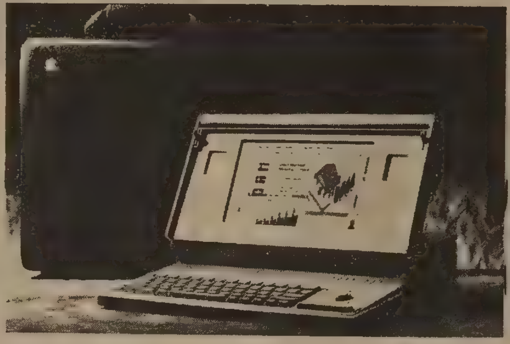

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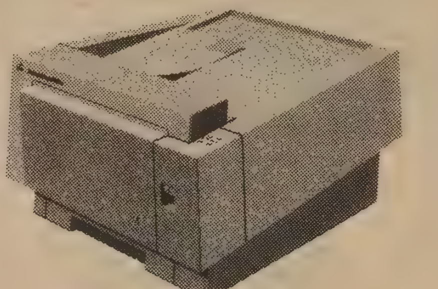

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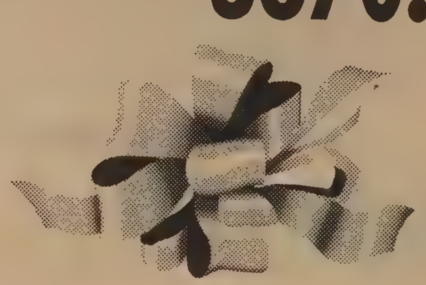

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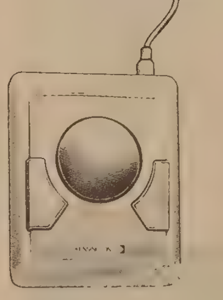

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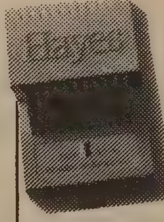

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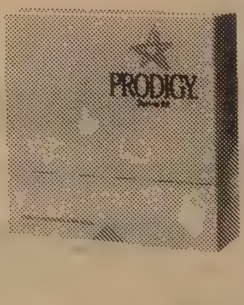

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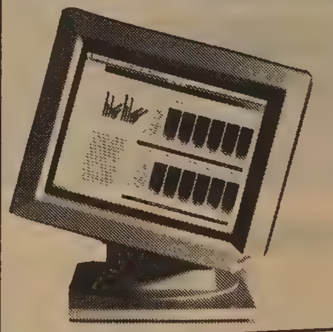

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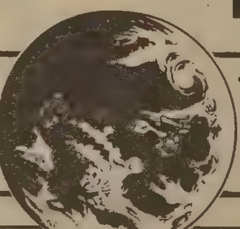

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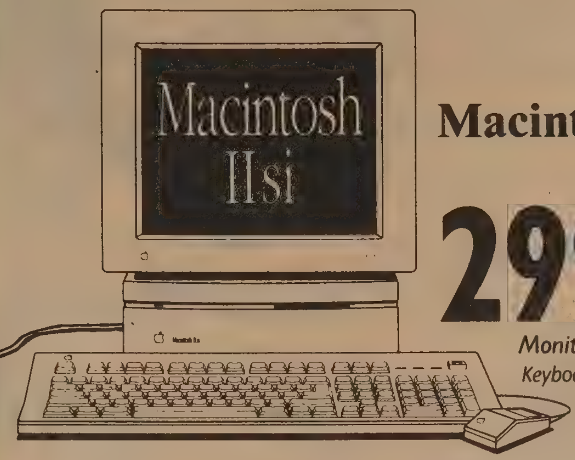

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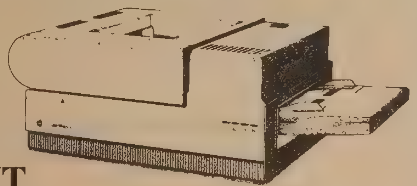

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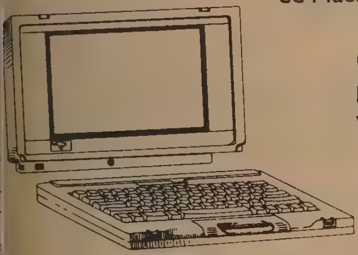

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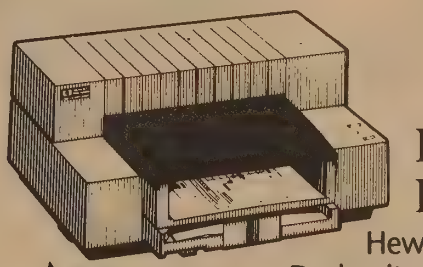

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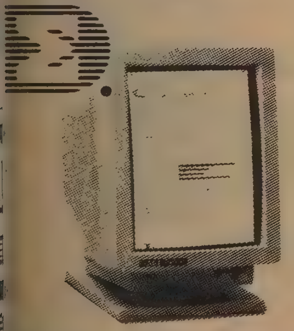

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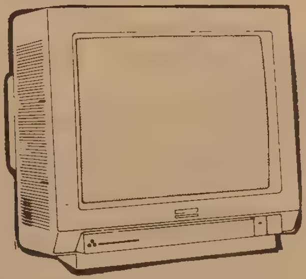

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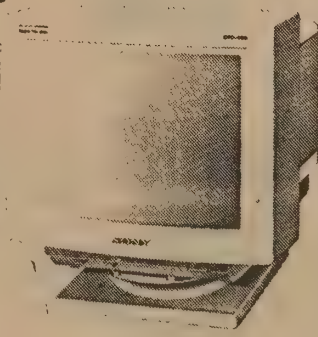

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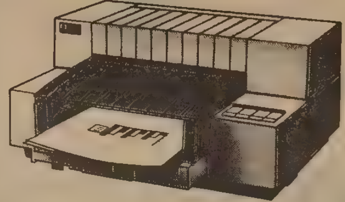

DeskJet 500 Printer

- Improved print quality
- Added internal fonts
- 3 year warranty
- Water resistant ink cartridges

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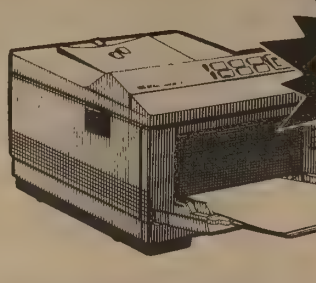

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- Most affordable HP laserjet printer
- Publication quality output

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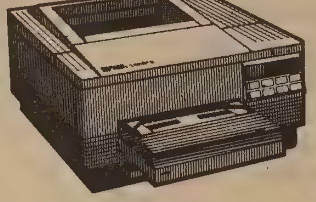

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- Now Hewlett-Packard LaserJet printers are PC or Macintosh compatible
- Appletalk® compatibility with optional interface
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BEST PRICE

Hewlett Packard
AppleTalk for
LaserJet III & IIP

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Available

ScanJet Plus Scanner

- 256 grey scale levels (8 bit) for high-resolution images
- Wide range of contrast & intensity control
- PC or Macintosh compatible
- Price includes interface

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the Revolution
in Resolution"

PaintJet Color Graphics Printer

- High quality color charts & graphics
- PC or Macintosh compatible
- Wide range of software support

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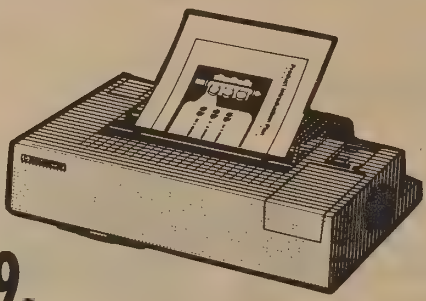


Print Kit for Macintosh

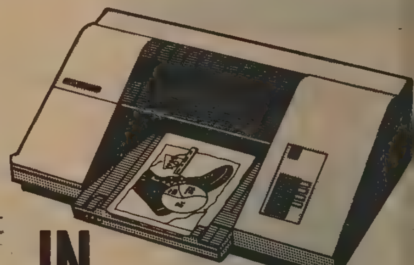
HP color print kit for Apple Macintosh computers

(Interface required to hook Macintosh with PaintJet and PaintJet XL Printers)

99.

PaintJet XL Color Graphics Printer

- Enhanced PaintJet quality
- Faster print speed
- Presentation mode — for highest quality graphics on paper
- Transparency mode



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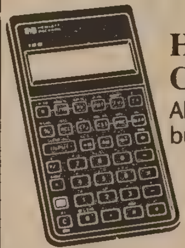

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All the essentials for business

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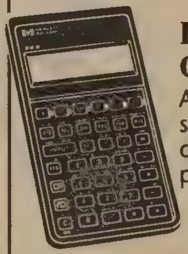

HP 20S Scientific Calculator

A program library to solve your challenging problems

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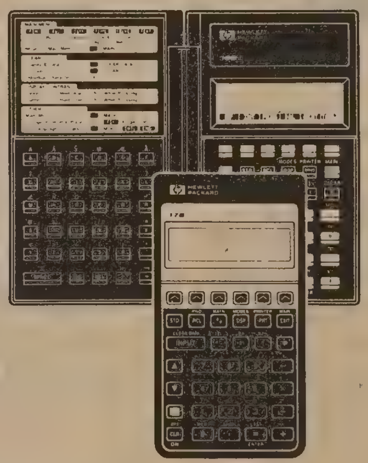

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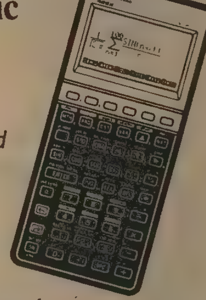

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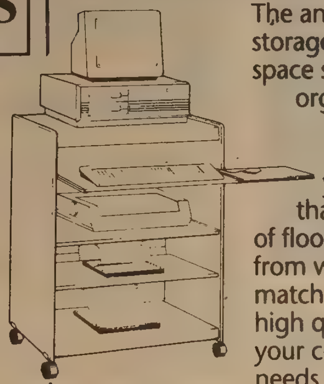
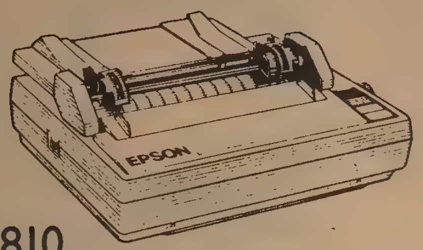
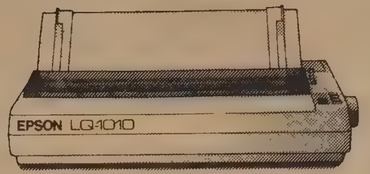


The answer to your storage problem. This space saver is designed to organize your entire microcomputer system – including your printer – in less than three square feet of floor space. Crafted from wood solids and matching veneers, this is a high quality solution for your computer furniture needs.



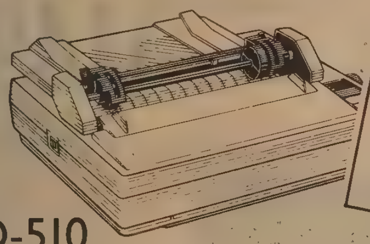
LX-810
- 9 pin • SmartPark™ paper handling
- 200 cps super draft • 30 cps NLQ
- High resolution graphics

179.



LQ-1010
- 180 CPS draft, 60 CPS letter quality
- 24 pin, 360x360 dpi graphics
- SmartPark™ and SelectType • Wide carriage

445.



FREE MULTI-MODE FONT WITH PURCHASE OF LQ-510

LQ-510
- Featuring SmartPark™ paper handling
- 180 CPS draft • 56 CPS letter quality • 2 resident letter quality fonts

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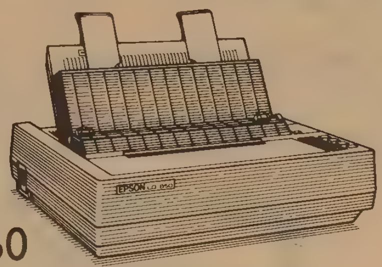

LQ-860

Epson's newest letter quality color printer • 300 cps draft
- 98 cps NLQ

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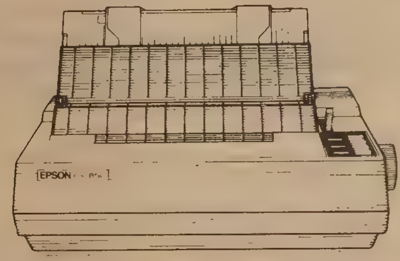
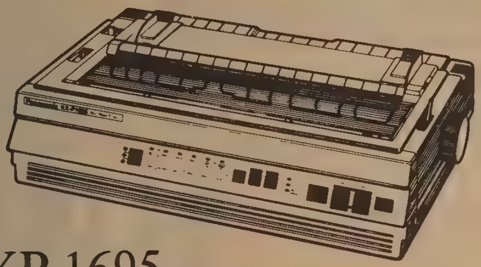


FX-850
- 9 pin dot matrix
- 264 draft 54 NLQ • Push tractor paper park for single sheet feed

369.

Panasonic
Office Automation OA



KXP-1695
- 9 pin • EZ set control panel • 330 cps draft • 66 cps NLQ • 8 resident fonts • 16.5" wide carriage • push/pull tractor • Rear, bottom and front paper feed

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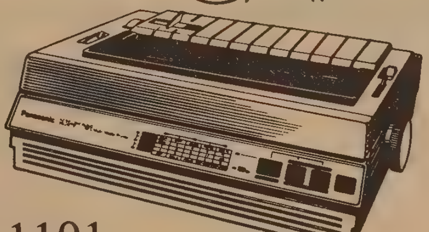

KXP-1191
- 9 pin • EZ set control panel
- 240 cps draft
- 48 cps NLQ
- 6 resident fonts
- push/pull tractor

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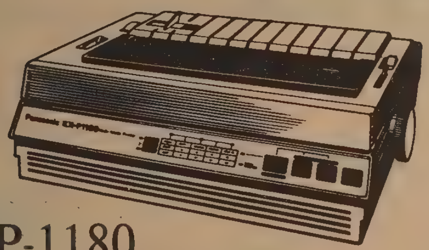
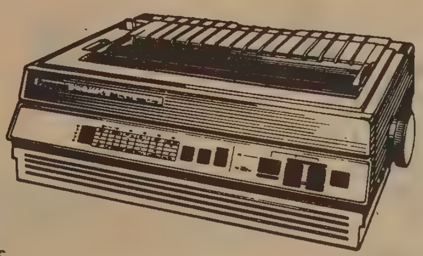


KXP-1180
- 9 pin • EZ set control panel • 192 cps draft • 38 NLQ • 6 resident fonts
- push/pull tractor
- 11.7" carriage

159.



KXP-1124
- 24 pin • EZ set control panel • 192 cps draft • 63 cps NLQ • 7 resident fonts
- 11.7" wide carriage
- push/pull tractor
- 360 x 360 dpi graphics

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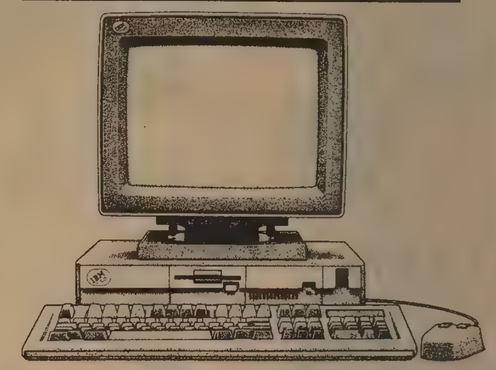

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- IM RAM expandable to 16MB RAM
- 1.44 MB floppy drive
- VGA graphics on board

Monitor extra

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PS/2 30-286 30 MB **1599.***

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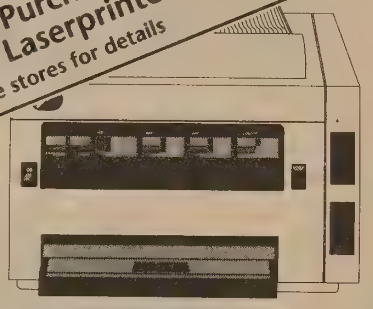

IBM Laser Printer 4019001 10PPM

- 10 pages per minute
- HP comp.

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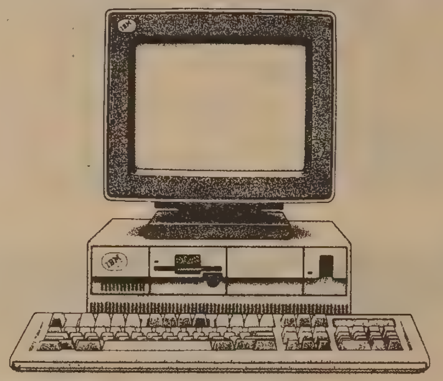
4019 IBM
All Stores

Laser Printer E 954.*



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- 80286
- 30MB hard drive
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- Built-in VGA

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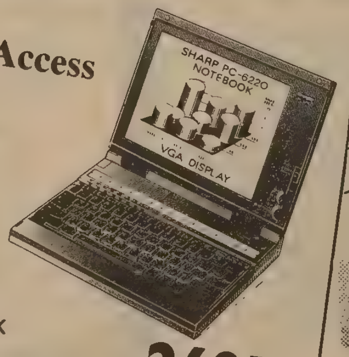

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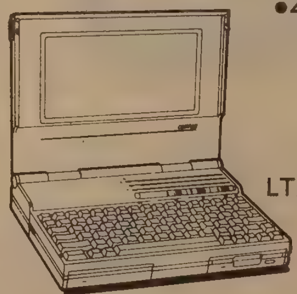

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- 8.5" x 11" & only 7 lbs.
- 1.44 MB floppy drive 40MB
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LTE/286 Model 20 **2595.**

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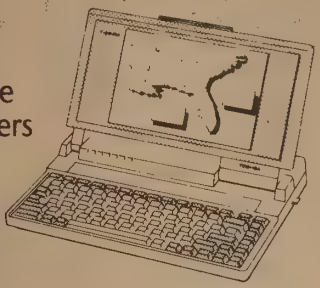

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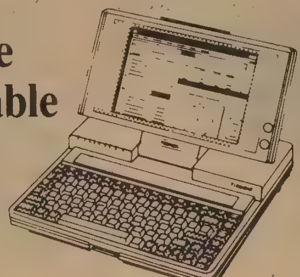
Toshiba's smallest, lightest Notebook PC with a hard disk drive.



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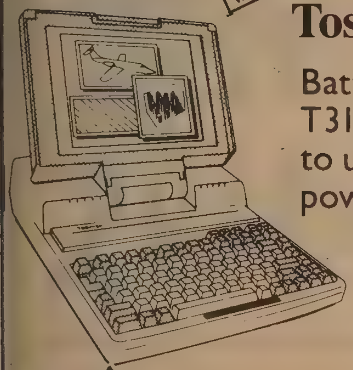

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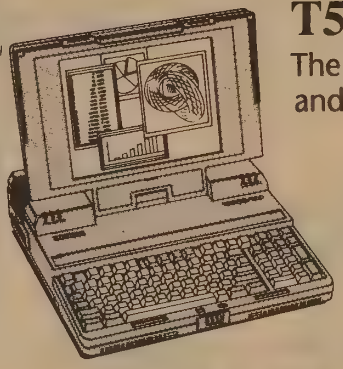

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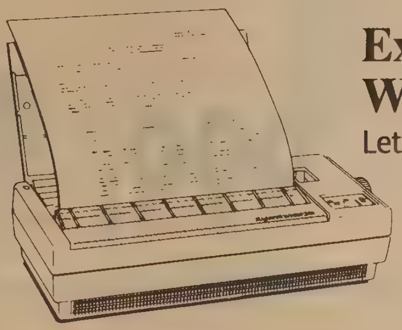

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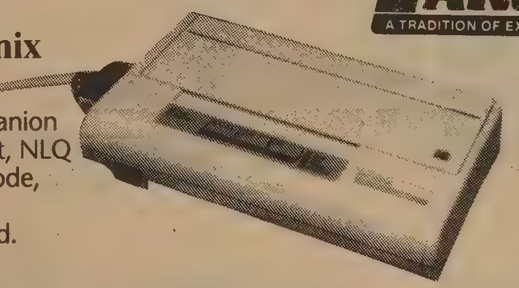
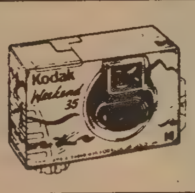
The laptop companion that prints in draft, NLQ and/or quality mode, designed with portability in mind.



379.



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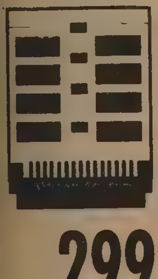

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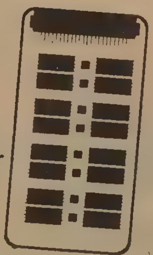

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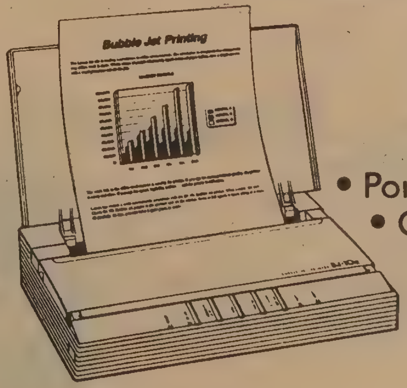

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• Portable 300 dpi printer
• Optional sheet feed

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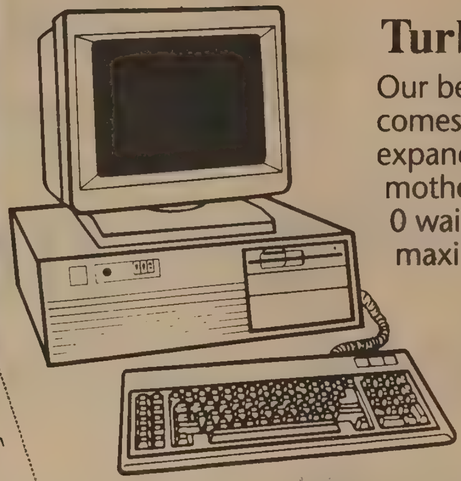

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- 40MB hard drive
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- 101 keyboard
- 2 serial 1 parallel port

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- 4MB RAM upgradable to 8MB on mother- board; 16MB w/32 bi memory card
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- IDE controller
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- True 20 Mhz 386 motherboard
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- 101 keyboard
- 1MB RAM

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- 64k cache
- 101 keyboard

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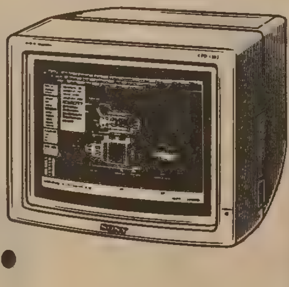

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- 14" VGA color
- .31 dot pitch
- Includes tilt & swivel base

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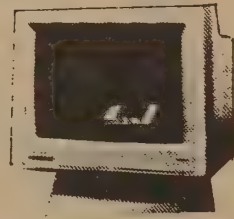

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- 1024 x 768
- 16 colors
- Interlaced or non-interlaced
- No switchers or jumpers
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MZ4575 14" Monitor

- Flat screen
- Black and white only
- 122 col, 640h x 720v with tilt and swivel

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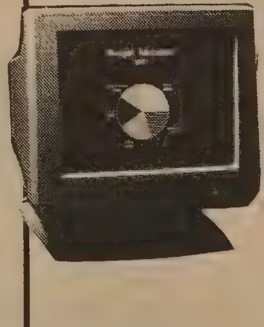

Hyundai HMM-1201A 12″ Monitor

- 12" Amber flat screen 720h x 350v with tilt and swivel

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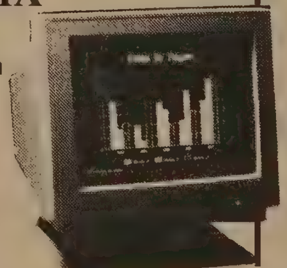

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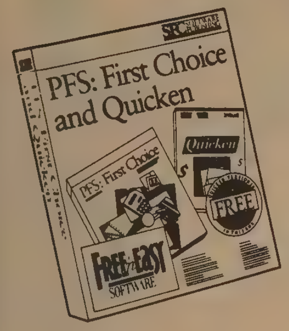
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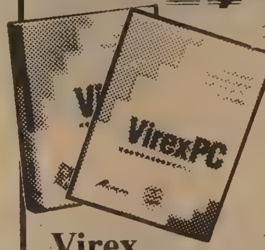

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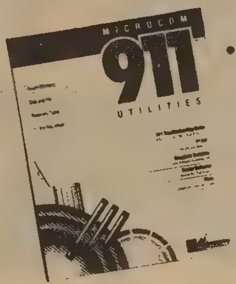
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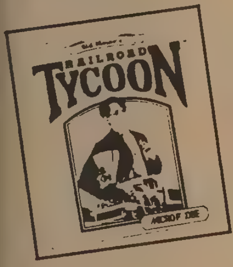
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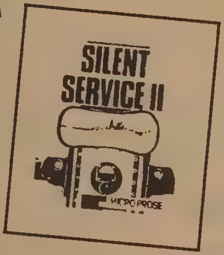
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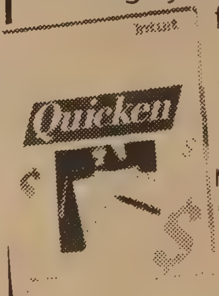
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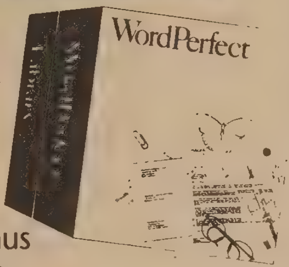
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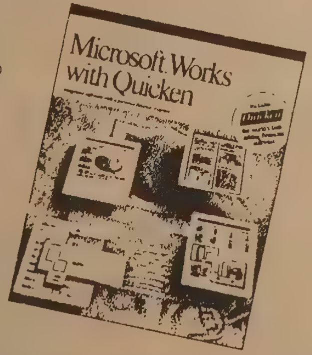
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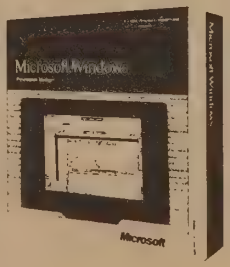
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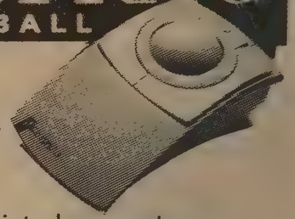

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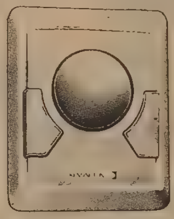

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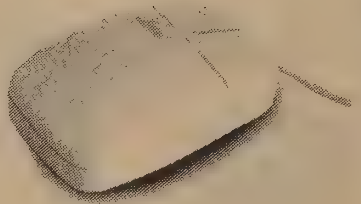

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Many people made important contributions to the industry during 1990, but we don't know about all of them. Particularly if they don't have a diligent PR person sending us regular installments of information.

You, on the other hand, probably know about somebody who's working on a project that may yet change the world. Or someone who accomplished something great even though the TV cameras were elsewhere at the time.

We'd love it if you told us about these people so we could tell others.

We'd also love your comments on prominent industry figures, and any other remarks you'd care to make.

We'll be giving ten free subscriptions to those who respond to the poll, so if you'd like to be included in the random drawing, please make sure we have your name and contact information on your form.

Since this list will appear in our January 1991 issue, the deadline for us to receive your responses is November 30, 1990.

You can send us your suggestions by filling out this form and sending it to us via US Mail or fax. You can also send us information electronically.

We look forward to hearing from you!

—MicroTimes editors

Who? (Name of the person who should be on this year's list)

Where? (Company name, location, phone number, so we can contact your nominee)

Why? (What achievement makes this person noteworthy?)

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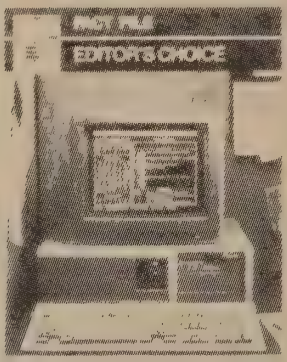

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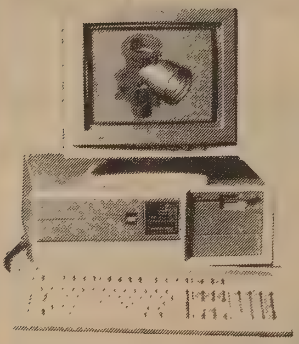

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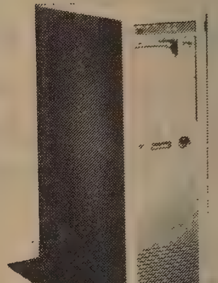

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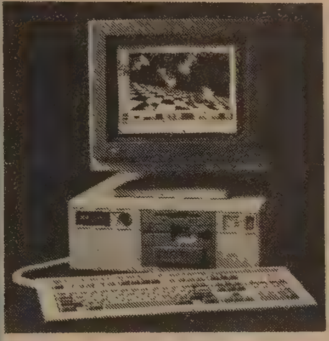

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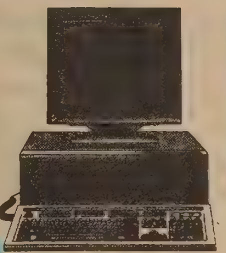

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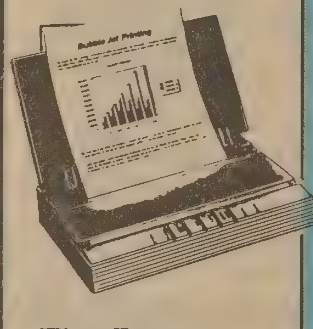

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BUSINESS SOLUTIONS

Choosing Accounting Software By The Module

Information To Help You Decide What You Really Need

BY MARGARET WRIGHT

You've decided to upgrade to a sophisticated accounting package, one that will do the job right. However, when your consultant/salesperson starts talking about all the different modules you'll need, you find yourself wondering, "Do I *really* need all those modules? Couldn't I get by with less?"

Almost all high-end—i.e., reasonably sophisticated, fairly flexible, and priced accordingly—accounting software is sold by module. Most packages are made up of 10-12 modules, each costing approximately $800. Depending on your needs, you may purchase one module, a combination of several, or all of them.

Since the cost of software can add up in a hurry, it's important to have an accurate sense of your needs before you go shopping. Just as there's no point in spending money on modules you don't really need, there's also no point in spending several thousand dollars for a few modules, only to neglect the one that will really make a difference in your operation. This article seeks to demystify what each accounting module does so that you can be a more informed consumer.

Although there's considerable variance in the strengths and weaknesses of particular packages, all of them consist of roughly the same modules with similar functions. (However, the way in which the modules interact varies considerably from package to package.)

GENERAL LEDGER

A general ledger module allows you to set up your accounts and post transactions to them. It will generate such reports as a chart of accounts, a trial balance, and basic financial statements.

ACCOUNTS RECEIVABLE

The accounts receivable module manages information about your customers. All accounts receivable modules have a screen for you to input your customers' names and addresses. Cash receipts and sales may be entered here if you are not using an order entry module.

You can use the accounts receivable module to access information about individual customers, such as the customer's current balance. Month-end routines in accounts receivable will provide aged customer balances and monthly statements to customers.

ORDER ENTRY

Many accounting software products require an order entry module in order to generate invoices for each customer transaction. If you use an order entry module in conjunction with an accounts receivable module, you'll enter sales transactions through this module.

An order entry module is also necessary if you want to generate detailed information about product sales—for example, the quantity of a given item sold during the month.

The order entry module will also generate information about gross profit by item, cost of sales by item, sales by salesperson, etc.

ACCOUNTS PAYABLE

The accounts payable module manages all information about your suppliers—e.g., their names, addresses, and phone numbers, and how much you owe them.

This module is used for recording cash disbursements. Most software allows you to create both manual and computer-generated checks.

Accounts Payable can also generate reports including payments due, cash requirements, cash disbursements, an accounts payable ageing, and vendor information.

INVENTORY

Often people think they want an inventory module and nothing else. However, when they start to enumerate everything they want the software to do, they quickly move beyond the scope of a typical inventory module.

For the most part, inventory modules allow you to increase inventory, decrease in-

The payroll module is particularly useful in conjunction with the job cost module. Using the two together will allow you to enter your payroll expenses and simultaneously designate which job they should be assigned to, so the data doesn't have to be entered twice.

Copyright © 1990 by Margaret Wright, MS, MIS, CPA. All rights reserved. Margaret Wright is an Account Manager with SymPro, Inc. She may be reached at (415)865-0600.

ventory, and move inventory between different locations. How they do these tasks depends on what additional modules you're using.

Typical inventory modules can generate purchase reports, stock reports, turnover analysis, transfers listings, mass price update reports, and valuation reports indicating the quantity and price of each item entered into and removed from inventory.

BILL OF MATERIALS

Not all vendors offer this module. Great Plains, for example, incorporates some bill-of-materials functions in its inventory module, whereas ACCPAC Plus, Macola, and MAS90 have separate high-powered bill of materials modules.

A bill of materials module allows you to keep track of some "processing" without giving you full manufacturing capabilities. Say that A and B are component parts that make up the finished product C. You want to keep track of all these items on hand, and assign some labor and overhead costs to product C. A bill of materials will allow you to do this.

It will not, however, keep track of partially finished goods. If you need to keep track of work-in-progress inventories, you need a more sophisticated manufacturing package.

PURCHASE ORDER

Many people assume, inaccurately, that the information provided by a purchase order module is included in the inventory module. For the most part, the inventory module only lets you increase, decrease, and move inventory.

The purchase order module, on the other hand, allows you to keep track of materials that have been ordered. You can get reports to inform you about such things as the status of outstanding purchase orders (including whether a particular order has been partially filled), when shipments are expected, which shipments are overdue, and what's been received.

JOB COST

The job cost module is useful for businesses that bid on jobs and track costs by the job. Construction is one obvious example, but engineering, architectural, and accounting firms also use some job cost modules.

A job cost module lets you create an estimate for a job, transfer the estimate to an actual job, enter the costs for that job, and generate various reports giving detailed information about specific jobs, or more summarized reports on all jobs.

PAYROLL

A payroll module keeps track of all payments made to an individual as well as all payroll deductions and expenses, vacations, etc. It also keeps track of personnel information.

The payroll module is particularly useful in conjunction with the job cost module. Using the two together will allow you to enter your payroll expenses and simultaneously designate which job they should be assigned to, so the data doesn't have to be entered twice.

REPORT WRITERS

Some software packages, such as ACCPAC

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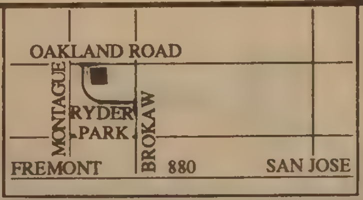

Plus, Solomon, Macola, and Great Plains, have separate report writers.

Most of the modules we've already mentioned generate standard reports; while they vary from package to package, they cannot themselves be changed.

A report writer allows the user tremendous additional flexibility in designing specialized reports. It lets you take almost any information generated by any module in the system and sort it however you want. This is particularly useful if you want to combine information from several modules into a single report.

IMPORT/EXPORT MODULES

Some packages have modules that allow you to input information that's already in machine readable form. For example, if you have a marketing information system in place that generates information about potential customers, and you want to be able to tell your marketing software to pass the information about potential customers who become actual customers to the accounts receivable module without having to enter it all from scratch, you'd use an import module.

An export module does the same thing in the other direction. If you want to take information from your inventory module, for example, and send it to a Lotus or Excel spreadsheet for analysis, you might use an export module. Many packages include this function with other utilities rather than offering a separate module.

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Great Plains—Great Plains Software
MACOLA—Macola
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SYSTEM MANAGER

There's considerable variation from package to package as to whether system manager functions are included with other modules or sold separately. These functions generally include a shell or utilities to perform such tasks as setting up additional companies, changing the date, maintaining security, and possibly posting transactions.

If you're running on a network (as opposed to a single DOS machine) you may need to purchase a separate network module. ■

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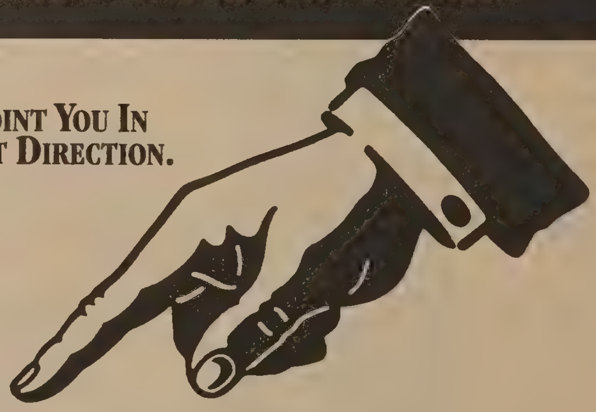

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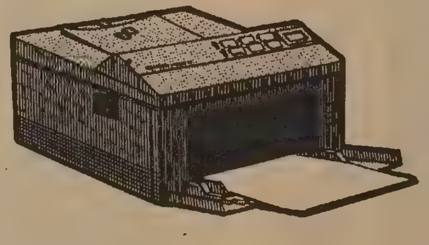

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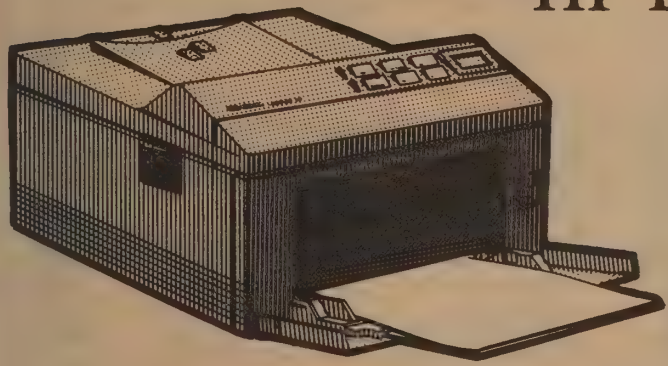

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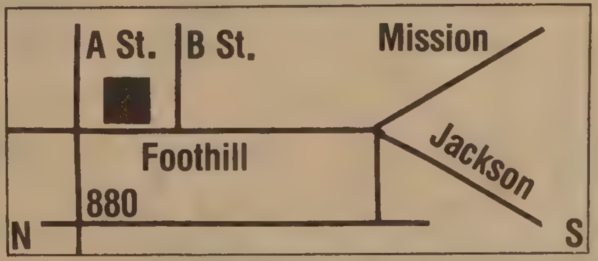

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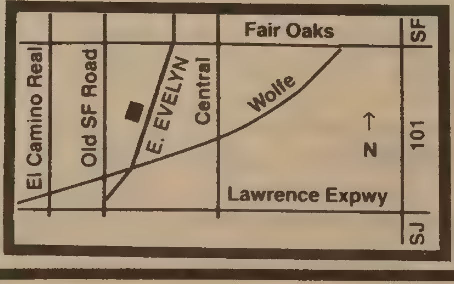

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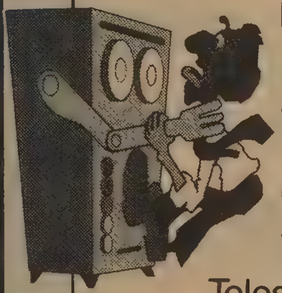

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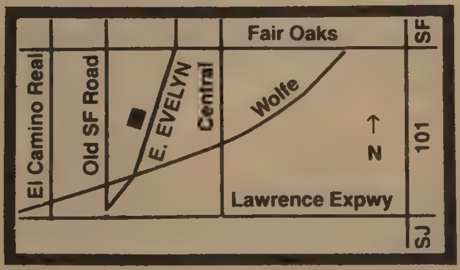

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Laptops In The Paperless Office

Scanners Change Everything

BY ED KAHN

Where will the laptop fit into the office of tomorrow? At the rate things are moving, tomorrow isn't that far away. The announcement of a new product by Xerox grabbed my attention and made me think about the place of the laptop in all of this evolution.

THE INTEGRATED, PAPERLESS OFFICE

Xerox now offers an integrated office machine that combines a printer, copier, scanner, and fax. Now, this sounds simple and obvious enough, but this is a revolutionary product. It means that the paperless office can actually become a reality.

Of course, for years we've been hearing promises that the electronic storage device can take the place of the metal file cabinet. It simply hasn't worked. If anything, the computer and copier have generated much more paper than ever before simply because it is so easy to do so. But think about what will happen when an office has a machine with Xerox's announced capabilities.

We already have all of these capabilities in many offices—with the exception of the scanner, and this is what makes the difference. When you really have a scanner and lots of storage—like a WORM drive that will let you permanently store gigabytes of material inexpensively—there is no reason not to scan in documents and store them for instant retrieval. Then, if you need it, the document can be called up, printed out or faxed to another person or department. The recipient, too, can store it electronically. They never have to print it out on paper.

Originals would not really have to be preserved except in those cases where true originals might be needed for legal reasons. After all, banks do not keep printed copies of monthly statements. It's all handled electronically.

The paperless office thus moves one step closer to reality. Don't get too excited, though, because these first machines are designed for large corporate users and carry a price tag of about $200,000. But you can bet that smaller machines designed for small offices and individuals aren't far away. After all, there is really little sense in duplicating so many parts of the equipment by having separate copiers and laser printers, which have a large number of overlapping parts. These big machines are really designed for large volume and will, for instance, allow a user to print hundreds of bound copies of large documents.

WHERE LAPTOPS FIT IN

So, what are the implications for the laptop computer?

Today one of the problems with the laptop is that it's difficult to work without a printer. But as the office becomes more electronic, the laptop gets right in step. A laptop user will easily be able to fax or modem a file in and have it printed at the recipient's end. When on the road, the laptop user will be able to tie in with almost anybody's printer—even down the hall from the office you are visiting—and print out a copy of a document, or simply make a standard electronic transfer. The laptop then takes its rightful place as a mobile module working hand in hand with office technology.

Currently the printer makes the portable office a complete unit. But as I see things developing, the printer may become less important on the road than the scanner.

Today, many laptop users carry small

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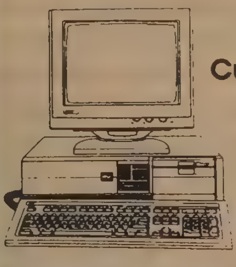

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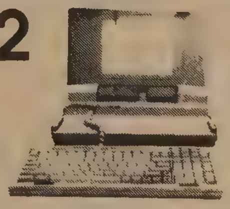

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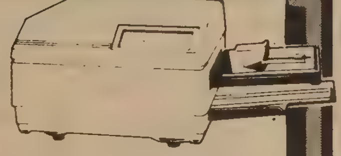

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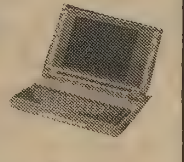

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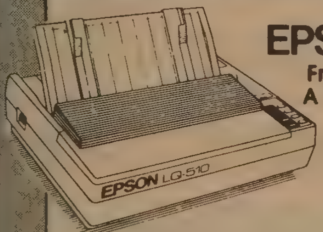

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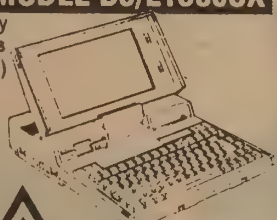

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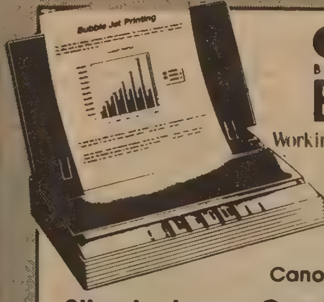

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portable printers with them so they can do more than simply create files for use later. The printer makes the portable office a complete unit. But as I see things developing, the printer may become less important on the road than the scanner. There's not that much reason for carrying around a printer—after all, they will be readily available wherever you need one.

But a scanner...that's a different thing altogether. After the modem, the scanner is without a doubt the fastest data entry device available. Research work will be speeded along with scanners. Library research is already on the verge of being revolutionized by scanners. There are currently adequate scanners like Logitech's ScanMan Plus for inputting graphics images and even text. The OCR (optical character recognition) software that comes with the scanner is inadequate for accurate text input, but fine for graphics. (Logitech says it will fix this in an upcoming software release.)

The laptop takes its rightful place as a mobile module, working hand in hand with office technology.

Already, more powerful OCR software such as OCRSystems' ReadRight Personal is available. Its vendors claim a 99.5% accuracy rate. The only thing that keeps a laptop user from scanning library material right now is the necessity of using a machine that will take a full length card. Several laptops allow this. The ScanMan Plus is both simple to operate and fun to use.

When scanners are really standard equipment on laptops and the office of the future becomes a reality, the portable user will enjoy the same kind of freedom as the cellular phone user does today. ■

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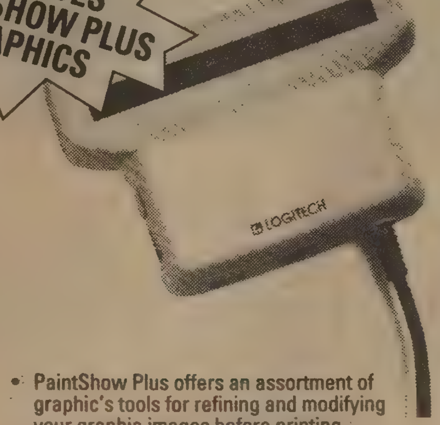

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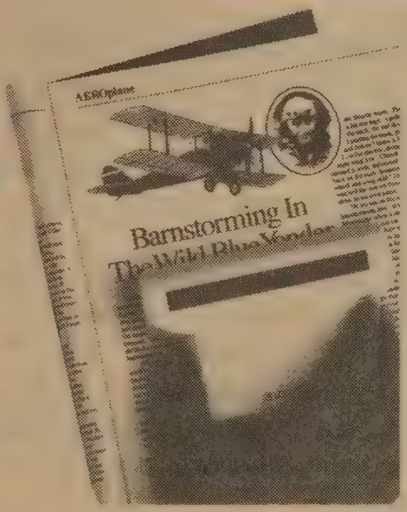

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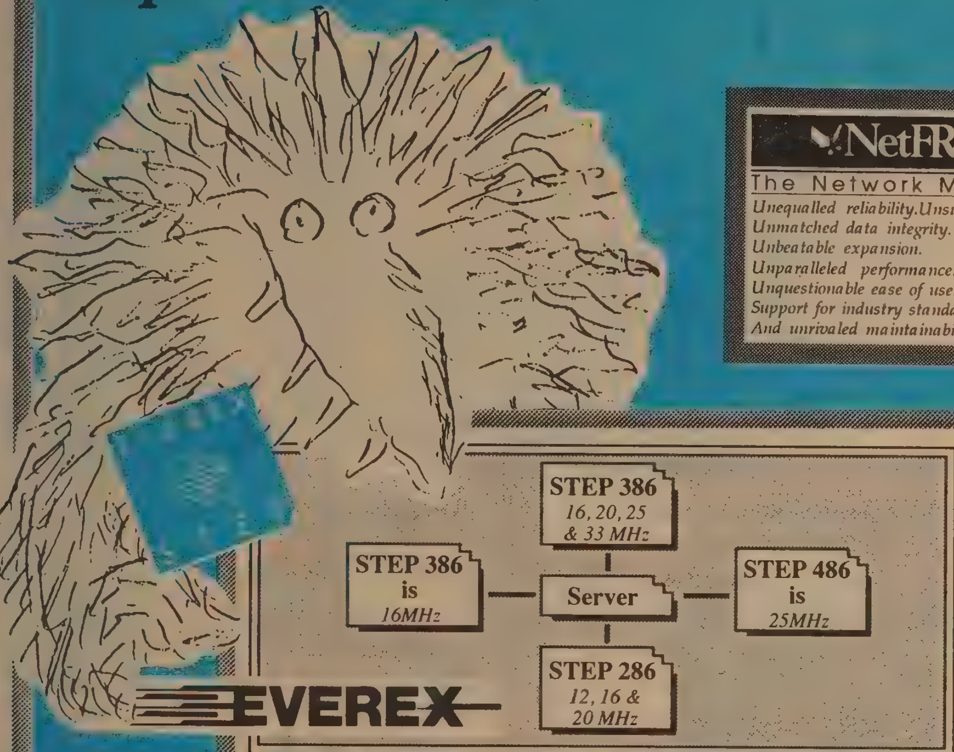

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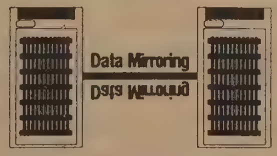

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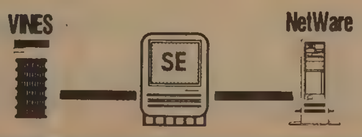

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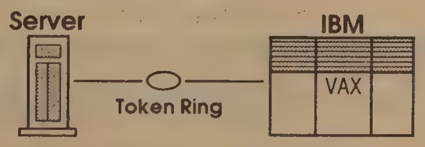

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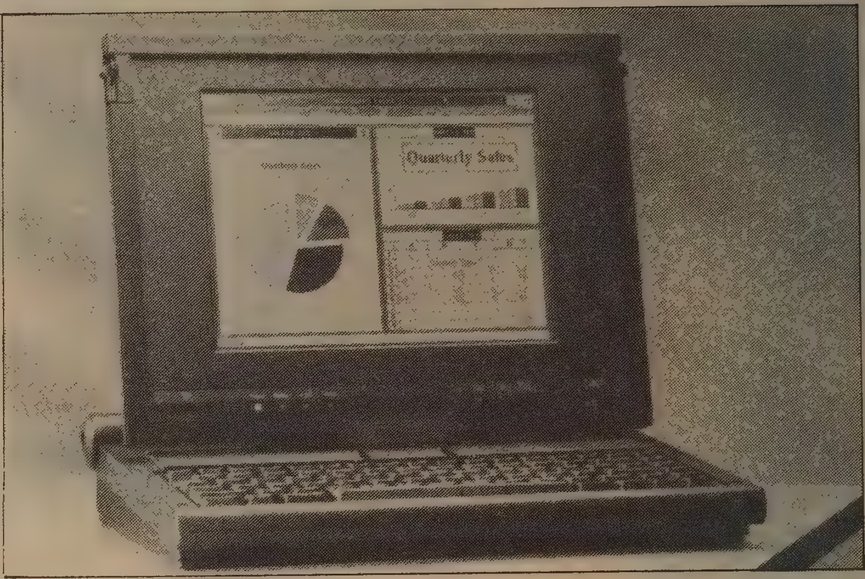
Computer Of The Month:

GRiD 1450sx



The power of an 80386 in a 7.9 lb. laptop with a VGA display pretty much sums up what you get with the new GRiD entry.

There's lots to rave about, but let me begin with the most important change they have made to their design. They have finally incorporated an excellent keyboard. It feels great, looks great, and is designed well, with all of the keys where you expect them. There's still an embedded numeric keypad, but there are also separate **home**, **page up**, **page down** and **end** keys. And the keys travel the full length.

Besides, if you don't care for the keyboard, you can plug in a standard AT keyboard of your choice. There are enough good keyboards out there so you will be easily satisfied.

This represents the next wave in small computers. Despite the slimness of the machine—11.5" x 12.5" x 2.6"—the built in 10" screen presents clear black letters on a silver white background. If you choose to hook up to a monitor, VGA compatibility is provided. One irritation of many other lightweight machines has always been the poor display when you connected to an external monitor, but this machine really has it all.

The design is an evolution from the normal clamshell. When you open up this system, the screen, which is a flat panel, swivels like an old-fashioned suspended mirror from front to back, allowing you to set the angle that works for you.

The battery design is also radically different from that of the competition. Instead of an internal rechargeable battery pack, GRiD has designed a slice—which is nearly the size of the bottom of the computer and about an inch thick—which attaches under the computer. When you do not need this additional bulk and weight, you can easily leave it behind. But when you attach the battery, you can be powered for up to either two or four hours, depending upon which model you purchase. Recharge time is almost equal to the time you can operate the machine on the battery. These battery packs—a two-hour model ($299) and a four-hour model ($399)—are sold as accessories. A number of sophisticated energy-saving options have been incorporated into the design of this computer.

GRiD has always provided a substantial number of options for its computers. The tradition continues with this model. A 2400 baud Hayes compatible modem ($595) is available; although this option is expensive, it is excellent. Unlike simple modems, this features MNP level 5 error correction and compression, the standard to which more and more high-end modems conform.

Although the 1450sx comes with two serial ports, when you configure the machine you must make a choice between the second serial port and the modem. You can use only two serial devices at a time. Nevertheless, it is handy to have this second serial port available. More and more, especially with the use of Windows so common, there is a need for serial ports, and few small portables offer more than one.

The computer comes with a choice of operating systems—MS-DOS 3.3, 4.01, or XENIX 2.3.2. The excellent one year GRiD warranty is standard. A carrying case ($125) has a couple of pockets that will store the computer plus the accessories you need for going on the road. The computer is available with either a 20 or 40 Mb hard drive. The additional cost for the larger drive is $500.

GRiD systems have never been inexpensive, but in this case you are getting a wonderfully thought-out system that will be in service years from now.

RESOURCES:

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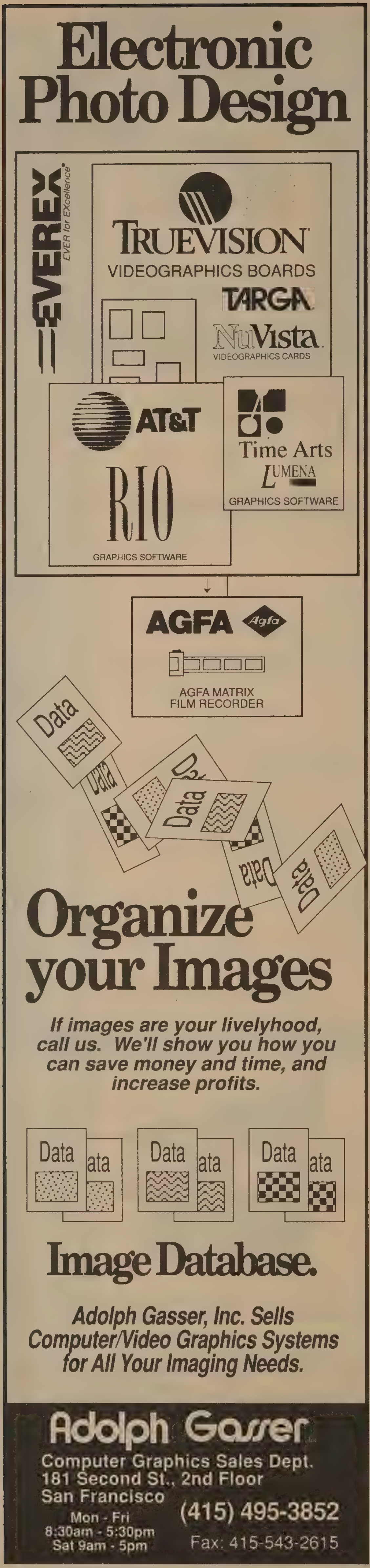

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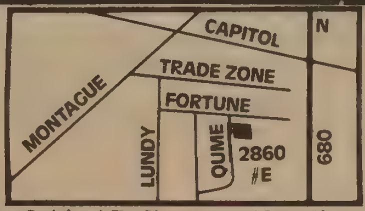

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Consultants And Your Business

How To Select The Right Person For The Job; How To Ask The Right Questions; How To Keep The Relationship Productive

BY MIKAEL BLAISDELL

The path to computerized success for a business or department is frequently rocky, for both first-timers and those who are upgrading or expanding existing systems. Tales of disasters, real and imagined, abound on all sides.

You've probably been advised to retain a "good" consultant, so as to avoid the mistakes made by others. Unfortunately, there are no industry standards that will make a "good" consultant stand out from the hordes to be found in the classifieds or the telephone book. But there is a benefit in listening to the horror stories of others; they should make you cautious and inspire you to take extra care throughout the process.

TROUBLE AHEAD, TROUBLE BEHIND: STAYING OUT OF IT

Perhaps the biggest danger facing the businessperson is that computers are often far more powerful than the purposes to which they are put really require.

At the same time, it is very easy to underestimate the effect that computers have on people and operations. You may find yourself thinking of the computer in terms of what the hardware and software cost you, not realizing that you have a significant investment in terms of time and training in the system as well. In fact, with the steady decrease in hardware costs, the non-tangible costs for consulting fees, training time and data entry may be far greater than the hardware totals for the system.

While the effects of computers are often underestimated, it is also true that most systems are not used to their full capacity. It is not uncommon to find a PC capable of handling the data processing needs of a company grossing several million dollars per year being used for nothing more than occasional spreadsheeting and word processing by one individual.

Consider that a 286-based PC with 4Mb of RAM and a 60Mb hard disk is perfectly capable of supporting ten-plus user terminals, several printers and a modem. Add a business management and accounting software package to that mix, and you have enough horsepower to effectively support a very sizable company. Cost for such a system would be less than $20K installed, with training for the system manager.

However, if you offered that same 286 PC, configured with DOS for a single user, to a typical small business computer consultant, the reception could be somewhat cold. What!? No 486? Only 4Mb RAM? Only 60Mb hard disk space? No network?! You've got to be kidding!

The difference has a lot to do with the observer's point of view, and this is where most problems with consultants and clients begin. Matching a computer system to the needs of a business is a very serious task, one that demands a great deal of skill and experience in both computers and in business operations. Computers are not panaceas for all ills—automating a non-functioning department or business simply produces a computerized mess that is more trouble than the manual problem it was intended to solve.

As a business owner or manager, you're retaining the consultant to apply his or her expertise and experience to the problems of your business, to identify possible solutions, and to recommend the best course of action. The principal assumption is that both you and the consultant will perceive the problems and potential solutions in the same way—and this is a particularly dangerous assumption to make. To avoid making a mistake at the very beginning, it helps to take a serious look at the consultant before you hire him—and to very clearly establish what you

> **You may jump to the conclusion that a computer system will magically solve all ills—and call in a consultant, saying something like, "I think I need a computer system in this area. Tell me what kind I should get." Blaming the consultant for the resulting mess is not very fair.**

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are hiring him to do.

TYPES OF CONSULTANTS

The most common type of computer consultant is one who has specialized in the computer industry, knows the range of equipment and software options, and can successfully configure and set up a system, often starting from scratch and assembling all the components personally. While the level of computer knowledge may be very high, the level of practical business expertise and experience, especially in the accounting field, is all too often very low or practically nonexistent.

This class of consultant is depending almost totally upon the client's definition of the business problems to be solved. If the business owner is able to accurately define the issues and all their ramifications, the resulting computer system may work very well indeed. If not, the stage has been set for potential disaster.

At the other end of the spectrum is found the very knowledgeable business consultant, who is familiar with the nature of business operations and/or accounting needs. As more and more accounting firms enter the consulting market, this type of consultant will become more commonly available. While such consultants may know more than their client about how the operation should be run, they usually do not have an equally deep knowledge of computer systems. Their focus is on the practical reporting needs of management. Their lack of computing expertise is likely to leave them overly impressed by the recommendations of the techies (which will probably cost you money for the "latest and greatest" toys), or lead them to ignore the limitations of the technology, resulting in unpleasant surprises after the installation is complete.

> **The most wonderful technology is essentially useless if it doesn't accomplish the business purposes for which it was bought.**

The best consultant is one that covers both disciplines in equal degree. Unfortunately, such paragons are rare. But despite the scarcity of dual-qualified people, there are ways you can take advantage of the skills and expertise of both disciplines while avoiding the pitfalls. You're going to spend some money, and some of your time as well, but the end result is well worth the expenditure.

WHAT TO ASK

The first and greatest rule for successful management of a consulting relationship is that you get to know your consultant before you sign the contract or make any purchases. Haste at this stage of the process will very definitely make later waste—don't get in a hurry. Take the time to find out the strengths and weaknesses of your prospective consultant. You should get acceptable answers to such questions as:

•How is the consultant being compensated for her time? If computer software or hardware is involved, is the consultant getting a commission from the manufacturer or dealer for her recommendations? (Note that commissions can take many forms —and every one of them casts doubt on the objectivity of the consultant.) Remember that you should be paying for more than just the actual time that the consultant will spend with you—to be effective, she must constantly be keeping up with the developing technology and practices. A too-low hourly rate may indicate that part of the compensation is coming from commissions on hardware or software sales.

•Does the consultant make his living from this work? Part-timers can be just as effective, in some cases, as full-time people, but be sure there are no hidden agendas or possible conflicts. If the consultant is someone else's moonlighting employee, he may not be readily accessible when you need him.

•What is the consultant's reputation among her other clients? Reference checking is one thing you will definitely have to spend time on—and you ignore this step at your peril. Telephone conversations are not likely to be enough; you should actually visit some of these clients and see as much as you can of the consultant's prior work. Talk to the operators and secretaries—the people who actually use the system—not just to the president or MIS manager.

If you can't do this kind of checking, or the consultant is new at the game, be very wary. It's not that such people can't do a good job for you; however, take the time to let them prove themselves with a number of smaller tasks before you commit yourself to something big.

•What is the consultant's standing in the industry or trade? How long has he been in business? What professional associations does he belong to? Call the local chapter officers for a reference if possible. Again, lack of such affiliation or references is not necessarily a bar to doing business with the individual, but it is something to be researched and considered.

> **We all have prejudices to varying degrees, and they can cause real problems. The computer consultant who walks in saying, "It's gotta be IBM/Apple/UNIX/etc." has some clear blind spots that can cost you a lot of money and threaten the chances for a successful project.**

•What are the consultant's prejudices and biases? We all have them to varying degrees, and such things can be definite problems. The computer consultant who walks in saying, "It's gotta be IBM/Apple/UNIX/etc." has some clear blind spots that can end up costing you a lot of money and threatening the chances for a successful project. Eager-beaver techies may be so in love with the technology they forget that the most wonderful technology is essentially useless if it doesn't accomplish the business purposes for which it was bought.

PLANNING THE PROJECT

Ideally, before you began the search for an appropriate consultant, you did a careful analysis of what you hope to accomplish with the consultant's help.

However, it isn't at all uncommon to find yourself in a situation where you need some

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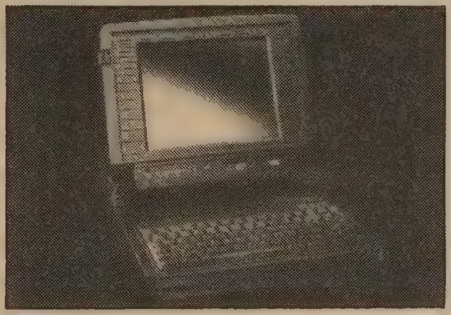

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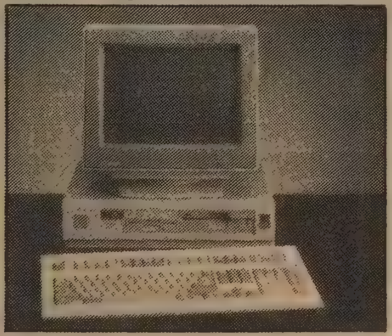

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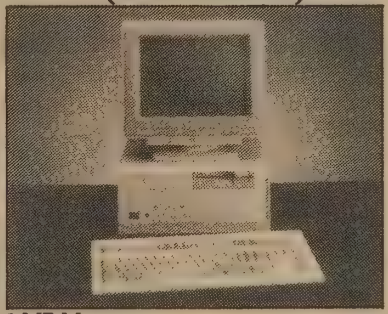

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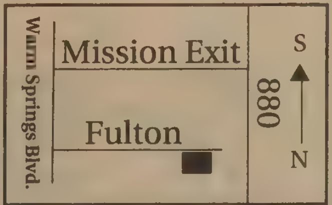

assistance in sorting out and defining the problems. In this case, the project needs to be considered in two separate phases.

The first phase is analysis and definition of the various elements of the situation, identifying problem areas as clearly as possible. The second phase is consideration of the available options for solving the problems. The steps need to be taken in order.

You may jump to the conclusion that a computer system will magically solve all ills—and call in a consultant, saying something like, "I think I need a computer system in this area. Tell me what kind I should get." Blaming the consultant for the resulting mess is not very fair, for the source of the problem is/was your failure to do your homework first. As the older generation of programmers was fond of saying: "Garbage in–garbage out."

A two-phase project may make the consultant selection process somewhat easier, in that you may be able to use the business consultant for the first phase, and tap the skill of the more technically oriented computer guru for the second. Another way to successfully work with a technocrat may be to represent the business end yourself, constantly stressing the business purposes and making the consultant fully demonstrate the capabilities of the proposed system in such a way that you are sure of its suitability. Either way may help you avoid the trap of being bedazzled by the wonders of the machine to the detriment of the business.

THE CONTRACT

Once you have clearly established what it is that the consultant is to do for your business, and have identified the consultant, the next step is the contract.

One of the major worries of any consultant is the fear of being sued over a project that went awry, and there are a variety of approaches that consultants will use to address this concern. The most common is the "killer contract," which attempts to sharply limit the consultant's liability. Another major concern of the consultant is getting paid, and the same killer contract will usually specify very carefully how and when payment is to be made, with penalties for late or

Check references. You should actually visit some previous clients and see as much as you can of the consultant's prior work. Talk to the operators and secretaries—the people who actually use the system—not just to the president or MIS manager.

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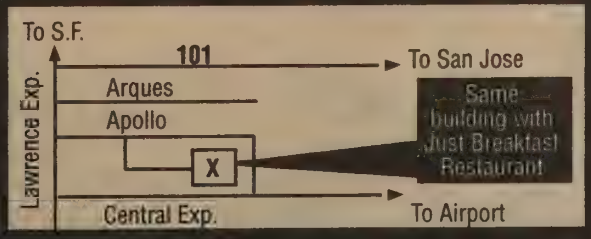

withheld payments. A large initial payment as a retainer is not unusual.

The issue of liability is a direct result of the common failure of both consultant and client to properly define the job to be done in the beginning. If/when the assumptions that both parties made at the start turn out to be wrong, it is understandable that each should tend to blame the other. The courts are full of the results of such arguments, and there are no winners in that game. Unless you really enjoy paying your lawyer and watching the fight, it is best to avoid this route.

The purpose of the contract is to define the job, who does what tasks, and how much is to be paid at what times. You should also include something that specifies how disagreements are to be handled. Ideally, if you've done your homework—specified the task and carefully selected the consultant—there shouldn't be any disagreements. The disagreement clause is a form of insurance—you hope you won't need it, but just in case, it's good to have.

The contract should be written in everyday English, avoiding both compu-babble and legalese. It should be thoroughly discussed and clearly understood by both parties in every detail. While this may sound like a lot of effort, the discussion will tend to identify areas of discomfort—and it is far better to discover such things at the beginning than at the end.

Perhaps the most important point for both parties to keep in mind throughout the process is that the best consulting relationships are long-term alliances between the parties to their mutual benefit. Save your hard-bargaining skills and attitudes for the used-car lot; lopsided consulting agreements don't tend to last very long.

It isn't hard to avoid becoming part of another horror story about a consulting project that turned into a disaster. If you take the time to do your homework first, exercising due care and common sense throughout the process of defining the job and selecting the consultant, your chances for success are likely to be excellent. The key element is in your hands, for you are the one making the decisions. If you abdicate your responsibility, and delegate the decisions to the consultant, the results may not be what you wanted. ■

The issue of liability is a direct result of the common failure of both consultant and client to properly define the job to be done in the beginning. Unless you really enjoy paying your lawyer and watching the fight, it is best to avoid this route.

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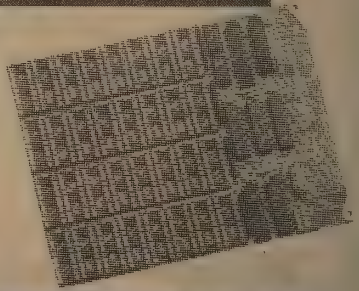

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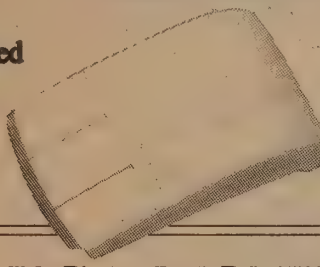

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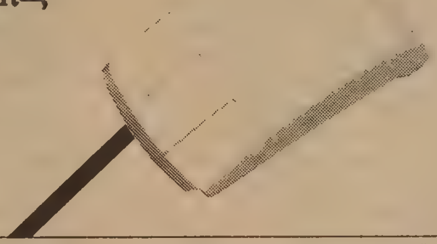

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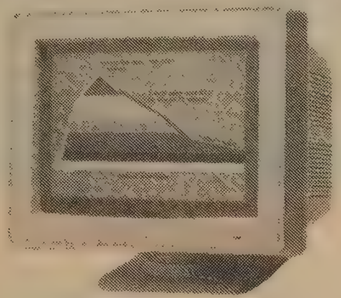

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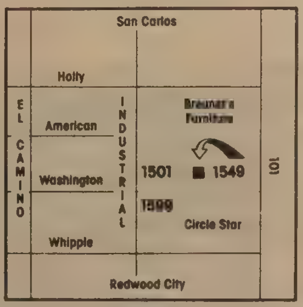

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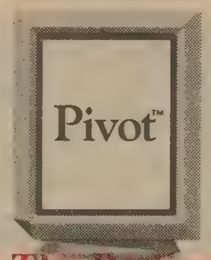

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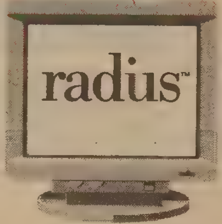

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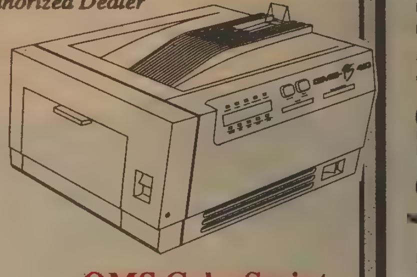

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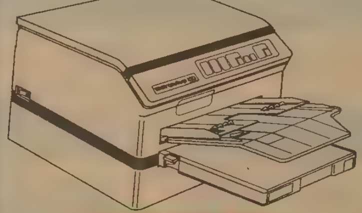

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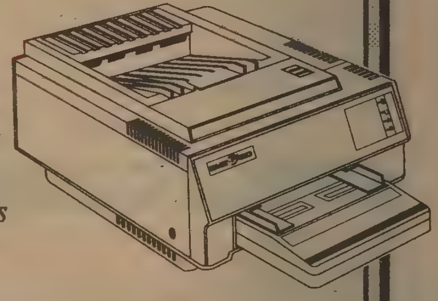

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The Outbound Portable

A Different Approach For The Mac-Using Traveler

BY BARBARA E. McMULLEN AND JOHN F. McMULLEN

In her review of the Macintosh Portable (issue #72), Mary Eisenhart put the traveling Mac user's plight in sharp perspective. While MS-DOS systems moved from the luggable Compaq Portable to the elegant Compaq LTE and the Sharp 6220 systems, Macintosh users saw little movement in portability.

To be sure, there were third-party solutions from Colby and DynaMac, but these systems were certainly more expensive than their DOS counterparts and, for many, not the answer. (In four years, we've met one person who actually owned a Colby—perhaps more are sold on the West Coast than in our native New York, but we have come to believe that the only Colbys manufactured are the ones seen at the various Macworld Expos and then sent around to publications for review. We have a DynaMac SE/30 and are extremely happy with it, but it is essentially a traveling desk unit—a computer with 180Mb drive and no battery capability.)

With these choices, many opted to either forego portable computing or purchase an inexpensive MS-DOS unit and then transfer files to and from the Macintosh. One of our solutions was (and is, on occasion) to carry the 2 1/2 lb. Cambridge Z88 as an electronic notebook, then move data to and from the Mac through a special ROM pack in the Z88. (Advantages: Light, powered by penlight batteries, easy file transfer procedure. Disadvantages: Small screen, software is not Macintosh-like.)

One thing that kept many of us going during this period was the rumor that a true laptop from Apple was "just around the corner." Even though it took years to turn the corner, most kept the faith; when the Macintosh Portable finally appeared, we were conditioned to look favorably upon it. It was, after all, from Apple! Additionally, it had to be more economical because Apple did not have to buy complete machines, as DynaMac and Colby did, to dismantle. Finally, it did have some very neat technical features. The battery life is outstanding; the screen is exceptional (in bright light) and the built-in track ball is innovative.

It is, however, as Mary points out, a transitional machine. It is too heavy, almost unreadable in poor light, underpowered in Apple-supplied memory, and, in short, not a great portable for the long haul. It is also, in our judgment, more expensive than it should be. Certainly, there will be lighter, cheaper and more powerful Macintosh-like portables in the future, whether from Apple or from others.

Even if help is on the way, what should we do until it arrives? Should we wait for the cheaper, faster, lighter unit, buy an inexpensive MS-DOS unit for the present, or make do with the Macintosh Portable? None of the choices is very appealing. It is, in our judg-

In response to customer demand for additional means of data access and storage, Outbound is introducing a new external floppy drive. The company anticipates that the 3.5" SuperDrive-compatible floppy drive will be most popular with users of the company's hard drive model of the Outbound Laptop. The Laptop is currently available in both internal floppy and hard drive configurations.

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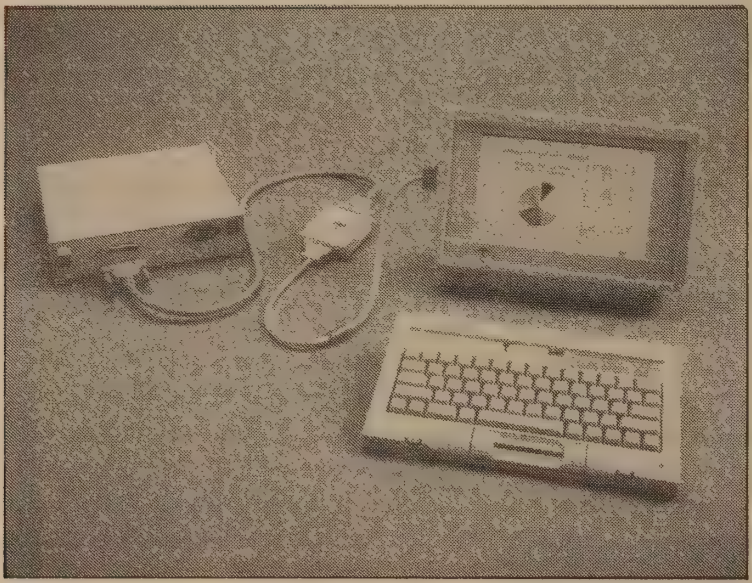
Barbara and John McMullen are principals of the 12-year-old consulting firm, McMullen & McMullen, Inc. They may be reached through MicroTimes or electronically through MCI-JMCMULLEN, uucp-mcmullen@well.sf.ca.us, AppleLink–X1888 or CompuServe–70210, 172.

ment, never a good choice to wait for a computer; the MS-DOS alternative is never attractive to true "Mac-ies"; and the Macintosh Portable will strike many as overly expensive for the value received.

One alternative that we do find extremely appealing is the Outbound Portable. We have been using the system for over a month and find that we grow more dependent on it each day. Not only is this system compatible with a Macintosh right down to the ROMs (more on that later), Outbound has added quite a few features which we believe enhance its performance. The Outbound is, in short, technically elegant.



With Outbound's new SCSI Adapter, users can drive their favorite SCSI devices from the Outbound Laptop system. This makes available to the Outbound user the full range of standard Macintosh compatible SCSI devises, including printers, scanners, and hard drives like the one pictured here.

Unfortunately, it is very difficult to write a review of the Outbound that will properly convey the "feel" of the machine. It's really a system which must be used to be properly appreciated. We find our respect for the engineering growing every time we use the system (in spite of the fact that we, collectively, have been using computers for around fifty-five years). Things that seemed to be annoyances when we first read about the Outbound turn out not to be when the system is used. Slight engineering changes that initially seemed to be made for the sake of change alone turn out rather to be subtle enhancements that make sense only through use. There's been obvious attention to detail in the design of the Outbound, and we feel that users will appreciate this effort.

"DOCKING" THE OUTBOUND

The Outbound Portable, originally called the Wallaby, is a product of Outbound Systems, Inc. of Boulder, Colorado. It is a 9 lb. unit that may be powered either by AC or battery power. The batteries provide approximately three hours of operation and are recharged while the system is run on AC power. They are user-replaceable; it makes sense for the user to carry a fully charged spare while traveling.

The reason that the Outbound Portable is, as stated earlier, Mac-compatible right down to the ROMs is that the Outbound is actually using the ROMs of a host Macintosh Plus, SE or Classic. That's right—the purchaser of an Outbound must own a Macintosh 68000 unit and have the ROMs from it installed in the Outbound. The Macintosh from which the ROMs came is then configured to be a "host" or "docking station" for the Outbound.

Using the Macintosh as a host provides the Outbound, when connected, with access to any peripherals (such as fixed disks, printers, etc.) connected to the Macintosh. In this "docked" mode, the operational keyboard and mouse are that of the host, while the screen to be utilized is determined by the user though a Control Panel setting. Either the Outbound or Macintosh monitor can be designated as active, or both can be used concurrently.

Unfortunately for Outbound, the idea of ROM removal and later connection to a Macintosh is a turn-off to many. Over the years, we've found that those of us who struggle with cabling computers together for data exchange tend to grow weary of the effort and eventually abandon the procedure. Such people will be pleasantly surprised by the simple procedure of plugging in the Outbound—it is no more annoying than plugging in the AC adapter. The cable is sturdy yet flexible and connects via a snap-on connector.

We use the hard disk on the SE as a file backup for data files from the Outbound and find that this procedure is non-obtrusive while protecting important information.

OTHER FEATURES

Outbound Systems has added a number of "goodies" to the standard interface and, while none may be earthshaking in itself, they show superb attention to detail. A prime example of this type of attention is the automatic test, while the computer is docked, of whether or not the AC Adapter/Battery Charger has been attached. Since the computer also works on battery power, it's easy to forget to connect the adapter, causing further battery drainage. The automatic test causes a message to appear on the screen if the system is docked but not connected to AC Power. This is certainly not an obligatory feature, but it indicates Outbound's concern with detail.

We have found the Outbound to be the most portable of all the Macintosh-like computers. It is fully compatible due to the use of the Apple ROMs. The screen is exceptional, and the subtle enhancements must be experienced to be appreciated.

A number of other system features reflect this concern—and some take a while to appreciate. The most obvious is the "mouse." Rather than using the standard Apple one-button mouse as a pointing device, Outbound has chosen to include a modified two-button Microsoft Mouse with the product. The left button functions in exactly the same manner as the single-button Apple mouse while the right button serves as an automatic "home" key; when the button is pressed, the cursor goes directly to the in the upper left hand corner of the screen.

Initially, the home button seems to be little more than change for change's sake. As you

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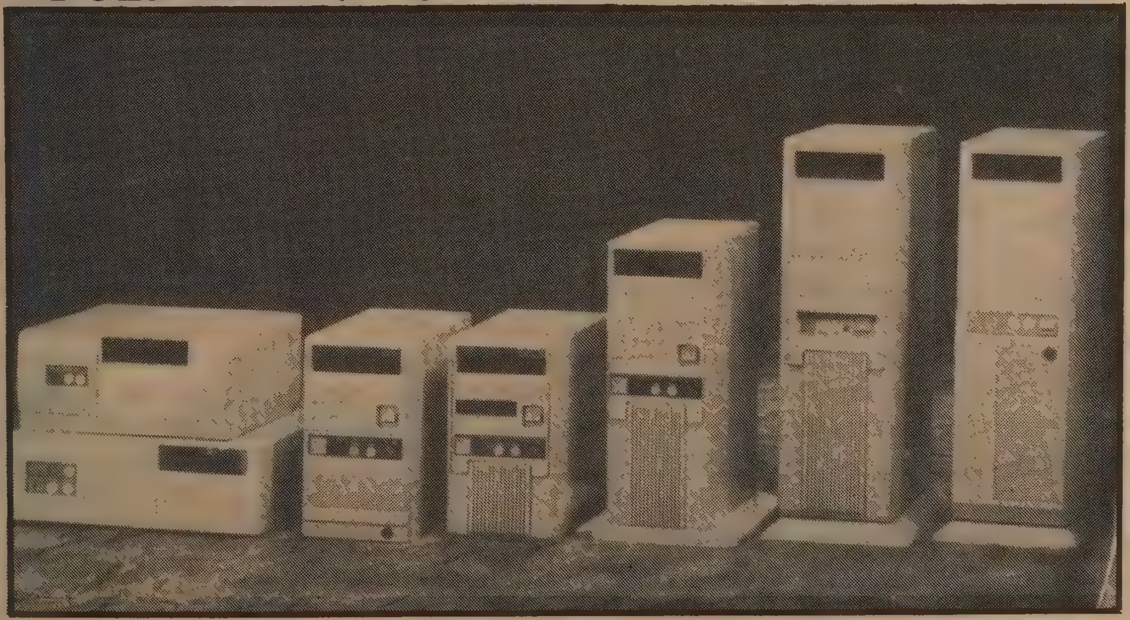

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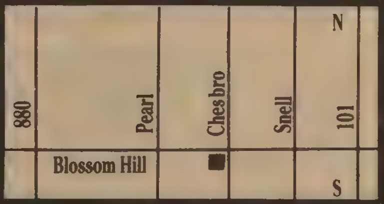
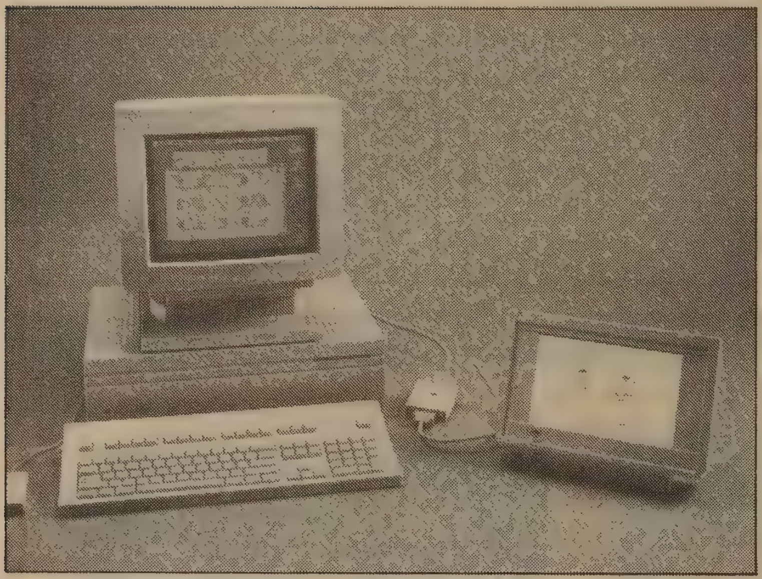


use the system, however, particularly in bright sunlight, the feature becomes very useful. At times, the position of the mouse cursor, through a phenomenon known as "submarining," becomes difficult to find. One click of the button and there it is!—a useful feature and one that we would have never thought to ask for.

Outbound has placed an "Isopoint" pointing device in the bottom middle of the keyboard (under the spacebar). The Isopoint allows the user, through one-finger movement, to perform the same type of cursor control that is accomplished through the use of the mouse. While facile mouse users will find that the Isopoint takes some getting used to, it's certainly a viable alternative to the mouse when space is at a premium—e.g., when operating the system on an airline tray or a lap. We have used the Isopoint rather than the mouse when using Word and Focal Point II and have had little problem. (Since the introduction of the Outbound, Grid Systems has incorporated the use of the Isopoint into one of its new MS-DOS offerings.)



The Outbound SCSI Adapter and Emulator also enables the Outbound Laptop's storage devices to function as SCSI devices that can be accessed from any Macintosh desktop, including the Mac II family. Once the Outbound has been plugged into the Mac via the SCSI Adapter, and an emulation utility has been run, a user can sit at a Mac II and open and edit Outbound files as if they reside on the Mac II desktop. In this way, the Outbound can be seamlessly integrated into a Macintosh environment anywhere.

The keyboard, which serves as both keyboard and system cover, may be operated in a variety of ways. It may be connected to the system unit via a coiled telephone-type cord (with a modular jack connector rather than ADB plug) or may be attached directly to the base of the unit by means of a clasp. When attached by the cord, legs on the bottom of the keyboard can be used to raise the rear to standard typing position. The direct attachment to the base is intended for cramped conditions or lap use; in that case the keyboard lies flat and rigid and actually becomes part of the base. The keyboard can also be used in an unconnected mode utilizing infrared signals. The mouse plugs into the keyboard and is usable in any of the three keyboard modes.

The Outbound physical design is of the "lunchbox" type rather than the "clamshell" variety (the Macintosh Portable and the DynaMac are clamshells). The unit fits snugly into the optional carrying case—a well-designed piece of luggage, laden with pockets and containing sculptured places for pens and diskettes. The roomy pockets and outside compartments allow the case to be used for many briefcase items. This is the best portable case we've seen.

While the Outbound is 68000-based, it operates at 15MHz rather than the slower 7.83MHz at which the Macintosh Plus and SE operate. It contains 1Mb of RAM, expandable to 4Mb; when the Outbound is in "docked mode," the user has access to the sum of the memory contained in the Outbound and host Macintosh, subject to a maximum of 4Mb.

Its screen is a fluorescent backlit black-on-white liquid crystal (LCD) display containing 640 x 400 pixels (rather than the smaller 512 x 342 on the Mac Plus. Outbound Systems has expanded the system's "Filer" Dialog Boxes to take advantage of the larger presentation. The screen is highly readable and, in low light, greatly outperforms the Mac Portable's display.

In addition to the fixed or floppy disk installed within the system, the Outbound contains a "Silicon Disk," a storage area made up of high speed RAM (1 to 4Mb) which stores information and transfers data extremely rapidly. It is particularly useful to keep the "System Folder" in the Silicon Drive, as doing so dramatically reduces startup time. When the battery is fully charged, the Silicon Drive retains data for up to a month without AC power.

OPTIONS

The Outbound Portable may be configured with a 1.44Mb SuperDrive floppy unit or with a 40Mb fixed disk. An external 1.44 SuperDrive (capable of reading MS-DOS files) is available as an option. The external floppy takes its power from the computer, is extremely light and, in our judgment, should be purchased with every hard disk system.

The only negative that we found with the external disk drive is that, while diskettes "mount" and "dismount" exactly like Macintosh floppy drives, the actual disk ejection is performed by pressing a button on the drive. This MS-DOS like method of ejecting disks is always dangerous on a Macintosh because, if the user does not remember to properly dismount the disk, files may be corrupted.

Another available option is a rather unique SCSI adapter that allows *either* SCSI devices, such as fixed disks, scanners, CD-ROMs, etc., to be attached to the portable *or* the portable to be set up as a SCSI device to another Mac (thus providing a path to a Mac II for data transfer). The SCSI adapter and the optional floppy unit both use the same plug on the side of the unit that's used to connect to the host Macintosh, so only one of these options is available at a time.

WISH LIST

During the course of our evaluation of the Outbound Portable we ran MS Word, MS Excel, FileMaker II, HyperCard, the Z88-to-Macintosh connection utility, and many other systems without difficulty. We used it extensively and transported it all over the Northeast, running it on both batteries and AC power in low-light and well-lit environments. The experience was quite pleasant, and we found very little to complain about. (This, in itself, makes the Outbound exceptional.)

In fact, other than the operation of the floppy drive, the only points that we feel are worth mentioning are two that would require additions to the system rather than correction of problems.

We would really like to see a built-in modem included with the system. The inclusion of the modem would, in our judgment, complete the package; the fact that a modem is part of the basic DynaMac product and optional with the Macintosh Portable makes its absence a demerit. We have discussed this point with Outbound management and have been told that there is just not enough space in the well packed case in which to fit an internal modem.

It's easy to work around the lack of a modem—the carrying case has pockets large enough in which to bury a modem, power supply and connector, and we have set up communications in hotel rooms and offices

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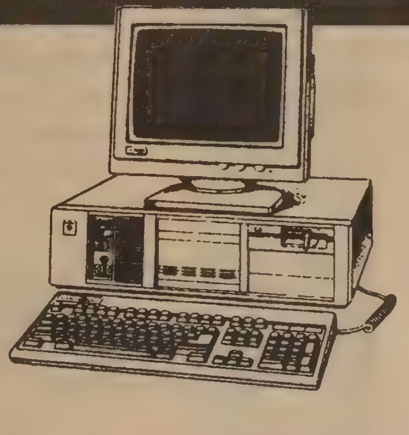

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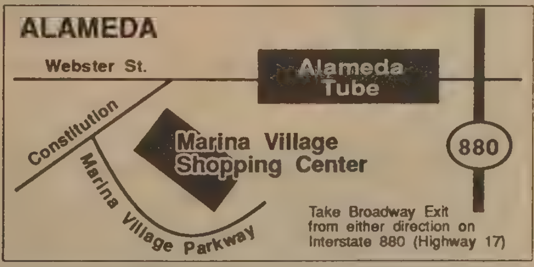

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The second "complaint" is even more picky. There is no Reset button or On/Off switch contained on the unit (the system is turned on by depressing the four directional keys simultaneously). We forced a condition in which we were totally locked out of the system and wished to turn it off. After looking all over for a kill or reset switch and going through the manual, we found that the system can be powered down by closing the base.

While this worked, it is hardly elegant, so we brought it up to Outbound technical support. They in turn informed us that the system may be rebooted by pressing the Control, Option and Delete keys simultaneously. (This worked, but did clobber a floppy left in the external drive.) The reboot in this manner is, unfortunately, undocumented, as it came into being in Outbound Systems Version 1.1 Environment while the manuals provided represent Version 1.0.

AGREEMENT WITH APPLE

As Outbound began to publicize its computer, there was some concern in the Macintosh community that Outbound's unique method of using the Macintosh ROMs will eventually become the subject of litigation between Apple and Outbound. This concern may have dampened sales of Outbound.

In early August, the issue was put to rest when Apple and Outbound announced an "intellectual property agreement." Although terms of the agreement were not made public, the joint statement ("Apple and Outbound believe the agreement will be beneficial to Apple, Outbound and their respective customers, as it protects Apple's rights while permitting Outbound to pursue market opportunities for its system") eliminates any worry that Outbound owners will become "orphans" because of litigation from Apple.

PRICING

The Outbound Portable is available in two models—a 1Mb unit with a 1.44 Super Drive Floppy at a suggested retail price of $2,999 and a 1Mb unit with a 40Mb fixed drive for $3,999. Each unit is expandable to 4Mb of RAM. Options available include a spare two-button Mouse ($129), carrying case ($119), spare battery ($99), spare AC Transformer ($49), SCSI emulator and adaptor ($149) and external 1.44 SuperDrive ($349).

CONCLUSIONS

We have found the Outbound to be the most portable of all the Macintosh-like computers. It is fully compatible, as one might expect, due to the use of the Apple ROMs. The screen is exceptional and the subtle enhancements must be experienced to be appreciated.

The only difficulty for Outbound that we see is that of market perception—a perception that ROM interchange and "docking" is a big deal and should be avoided. That is not the case; the system is of such quality that we recommend that any one requiring Macintosh portability seriously consider the Outbound. Our experience has been uniformly positive and we have no hesitation in recommending it strongly. ■

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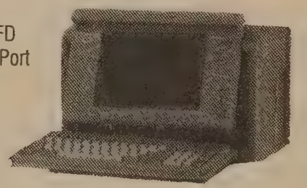

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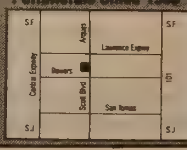

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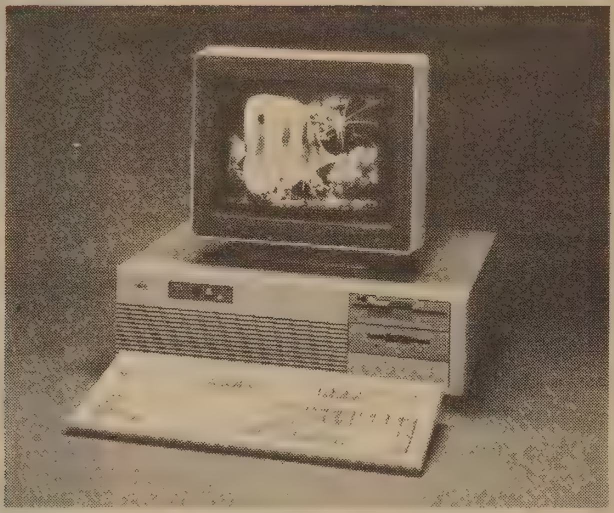

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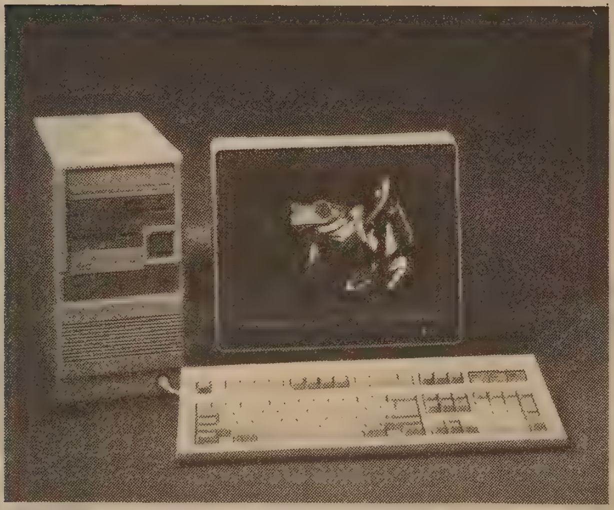

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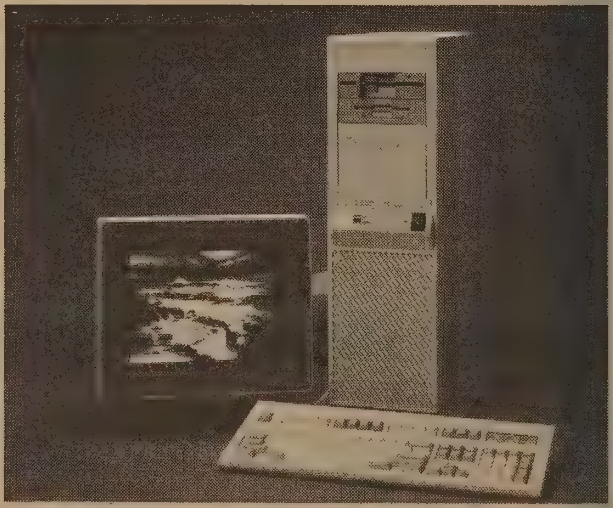

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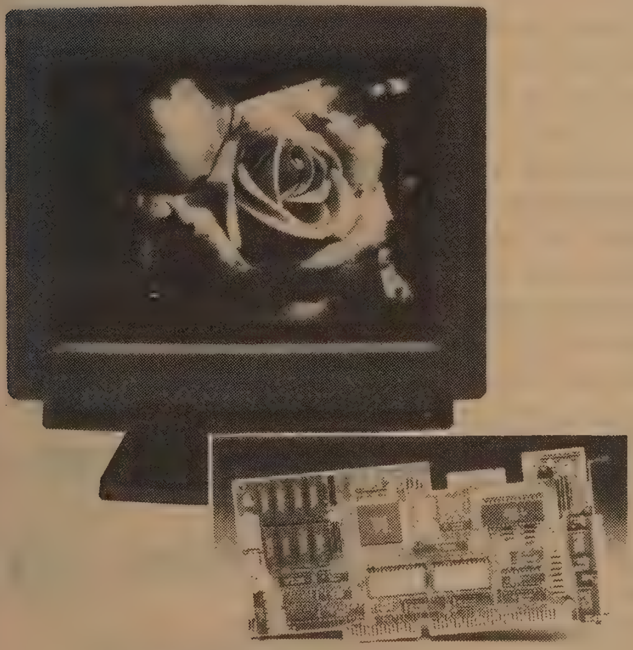

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Office Solution For Windows

A Sign Of Things To Come?

BY WAYNE A. YACCO

LOCAL AREA NETWORKS

Last month's column concluded with a promise to continue with a discussion of Office Solution, a document-and information-management system, currently in large law offices and several other vertical markets.

Office Solution for Windows is a suite of off-the-shelf applications—including the Mezzanine network file-management system—that have been integrated with macros. Because it's customized, and all of the applications it unites are bundled with it, it's a pricey PC-based product ($1,430 per workstation client license including applications; perhaps $20,000 for creating SQL databases for the catalog server; $5,000 per additional catalog server when the net exceeds 200 clients; 15,000 or so for training, and so forth). This is an MIS application, not a mass-market product, but something like it could be in your future.

Why? Well, what's really interesting about this is that high-level Microsoft executives like Mike Maples are already talking about macros replacing conventional programming, and even fourth-generation languages. Instead of application development, Microsoft foresees linking standard applications through Windows, OS/2, or a similar environment. Office Solution does that with macros written, not with the Windows recorder, but in Word for Windows BASIC—a relatively powerful macro language that's built into the word processor.

Copyright © 1990 by Wayne A. Yacco. All rights reserved. An editor, writer, and consultant specializing in microcomputers and their business applications, Wayne Yacco writes articles, columns, and reviews for many trade and business publications. He can be reached at Box 269, Burbank, CA 91503.

Office Solution is based on the Mezzanine network application platform (file management) for Novell and LAN Manager nets. Mezzanine requires an OS/2 server. Its client-server-based architecture has a SQL Server-based engine and uses the named pipes protocol to transparently move data on the network. Complete version control, security, and privileges are built in. The system keeps a configurable number of versions and controls access to master copies. Clients work with copies only. It even supports DDE without a Windows interface. (Mezzanine is available as a separate application from Saros.)

What Gilbert and Associates adds is custom programming for the SQL Server database, included with Office Solution, and a number of other applications integrated with macros. Besides Windows and Word, they include Polaris PackRat, a text database/PIM with phone book, phone (note) Log, calendar, to-do list, Quicken-like financial facility, diskfile, and project management, Da Vinci eMAIL, and the Q+E database query language for dBASE, SQL Server and ASCII files.

Gilbert and Associates use these off-the-shelf programs to implement a variety of custom applications. A large mortgage and banking firm uses Office Solution to track word processing files and cross reference them to mortgage reference numbers. From inside Word, the company can perform a SQL search of all documents connected to a mortgage. According to partner Phil Gilbert, other applications include insurance claims, government contract management, or any application where a large number of different documents need to be related to a job, activity, project, or client. Publishing could be another.

To a user, the special functions look just like any other Word dialog box. When the user closes a document on the client node, Word opens a DDE channel to Mezzanine via its macros. Mezzanine stores the document in the proper server and updates information about it residing in a SQL Server database. Any user can locate the document using attributes such as title, author, keywords, or

A large mortgage and banking firm uses Office Solution to track word processing files and cross-reference them to mortgage reference numbers. From inside Word, the company can perform a SQL search of all documents connected to a mortgage.

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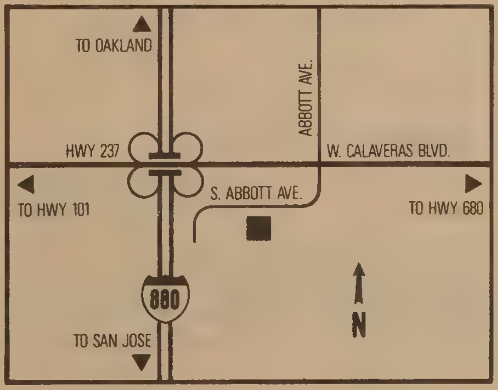

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in 2

INTO COMPUTERS

RESOURCES:

Office Solution for Windows: Custom Pricing
VIEWz: $395 ($245 until 12/31/90)
Gilbert and Associates
(213)454-7679

Mezzanine: $2950 for the server
Workstation-access package: $195
(required for each node)
Saros
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other search keys–without knowing the DOS file name or network path. The network path to a file is never needed with Office Solution. And support for Excel documents is coming soon.

But what about a solution for smaller organizations, or those just wanting the document management without custom SQL Server applications? Gilbert and Associates already have something for the mass market. It's called VIEWz—essentially the core of Office Solution for Windows. It has the Mezzanine document manager, Windows, and Word for Windows, but lacks direct access to SQL Server. It's just $395 and, until year end, only $245 when you buy Mezzanine from Saros.

NET COMPANION

One of the diagnostic programs I wrote about recently for this column was System Sleuth from Dariana Technology Group. They have since come out with, or announced, two new versions of the product for the Mac and MS Windows, as well as a LAN product called NetCompanion.

NetCompanion is a collection of utilities for managing your network. GETUSER, for example, helps you to create new, or update existing, servers by creating a .USR file compatible with the NetWare MAKEUSER utility. You create this file quickly by using the existing file as a template. NCONNECT tells you who's logged on to the net and can enforce restrictions. NETSTAT gathers statistics and reports them from the DOS command prompt. SCONTROL provides Supervisor control from any console. You can Down file servers, control logins, open and close file-server bindery, clear connections on a file server, and turn file server TTS on and off. WCONSOLE shows you IPX, SPX Network Shell, or DOS configurations for all workstations, bridges, and servers. VMODE and VTYPE give you the video mode and card type at any workstation. Finally, you can monitor print queues with QSTAT.

They could have called this particular program the Shadow—as in: "Only the Shadow knows..." ■

Instead of application development, Microsoft foresees linking standard applications through Windows, OS/2, or a similar environment.

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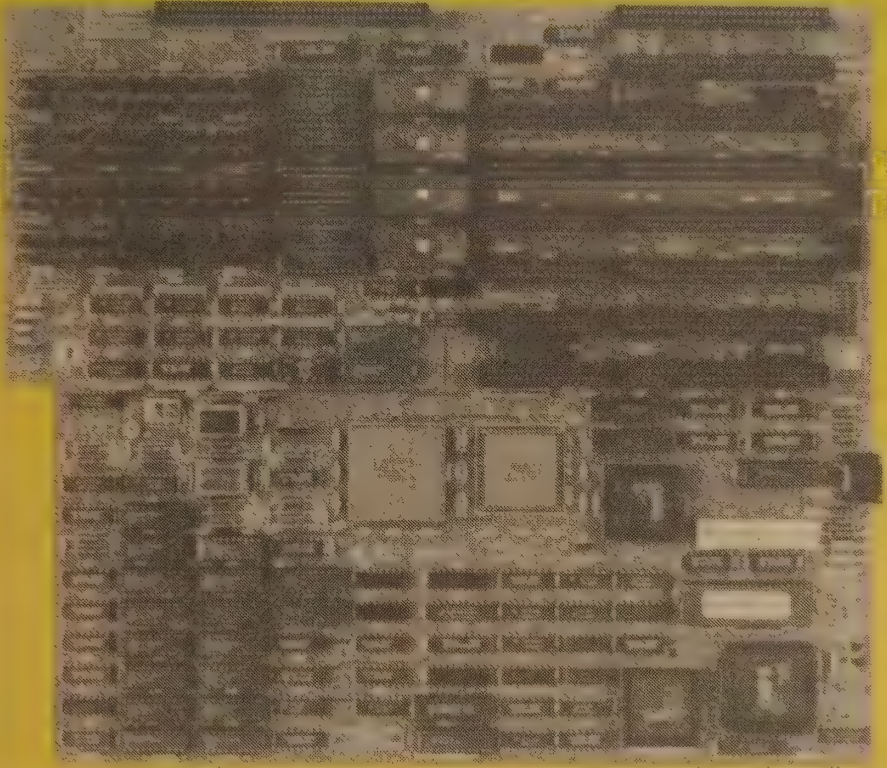

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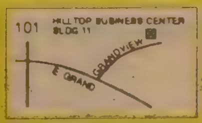

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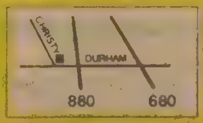

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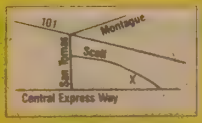

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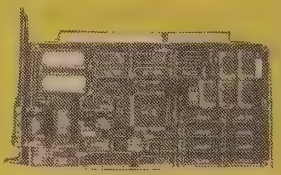

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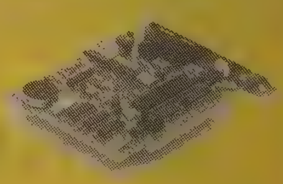

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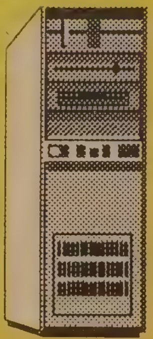

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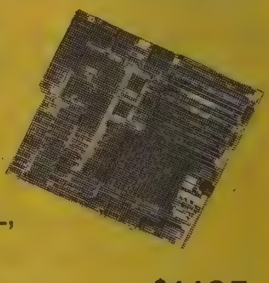

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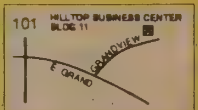

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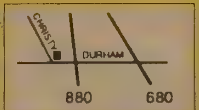

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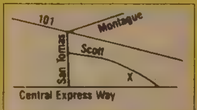

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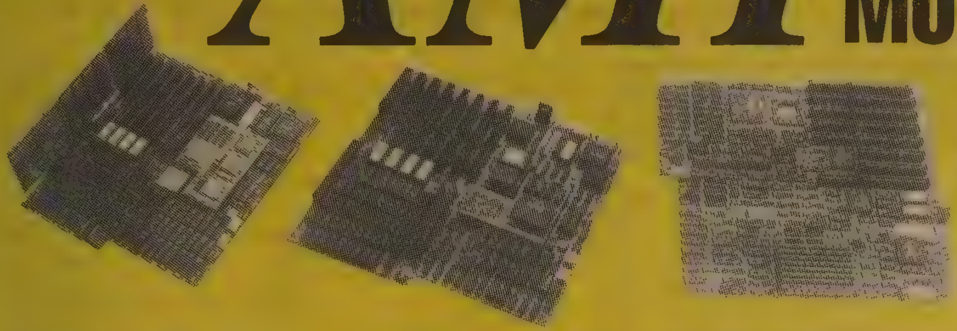

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PC Magazine, Aug. '90 writes, "It's simple to use, appears to be extremely accurate, and should be added to your must have list of software."

PC MAGAZINE

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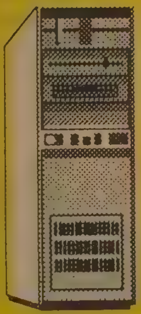

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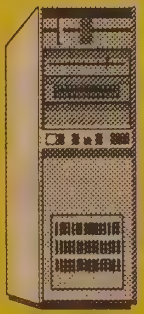

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100 MB HARD DRIVE	**500**
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4 MB RAM UPGRADE	**190**

AMI MkII F4 386-33

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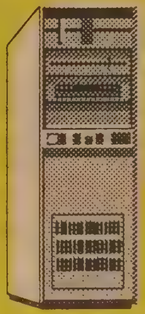

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HD/FD CONTROLLER
1.2 OR 1.44 FLOPPY DRIVE
PIXEL VGA w/1 MB

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OPTIONS:

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100 MB HARD DRIVE	**500**
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Fremont, CA 94538
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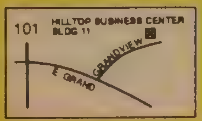
FAX: 415-623-7592



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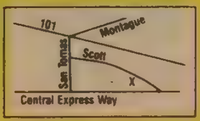
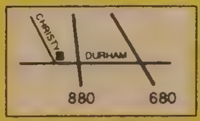


Santa Clara



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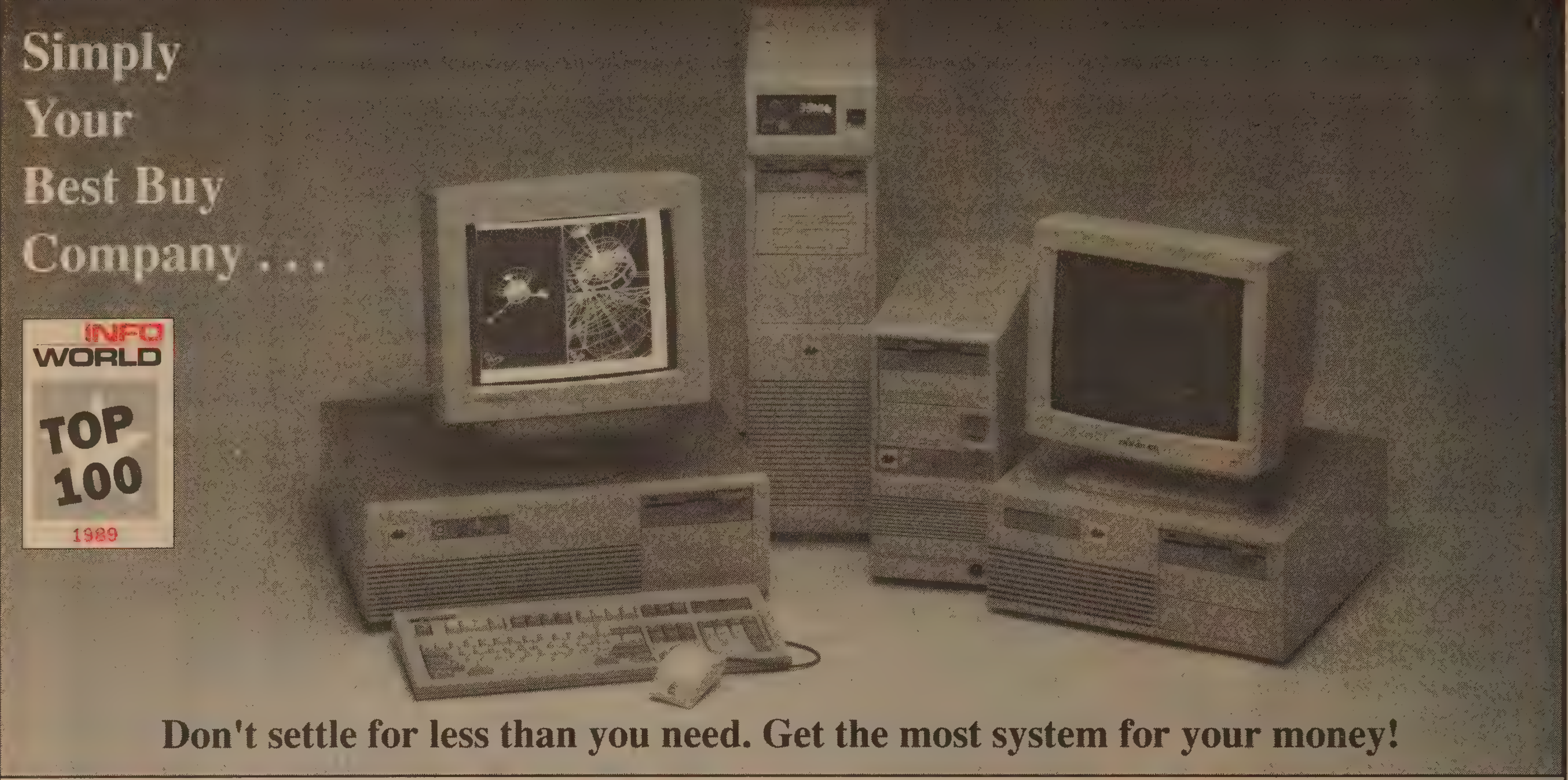

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☐ 158 MB, 14 ms ESDI Hard Drive
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☐ 158 MB, 14 ms ESDI Hard Drive
☐ ESDI Controller with 32K Cache
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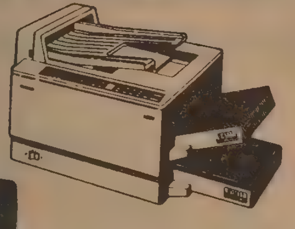

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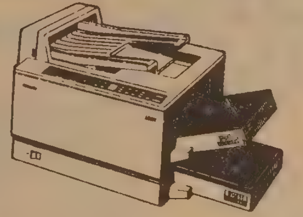

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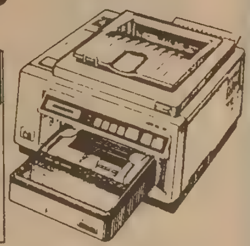

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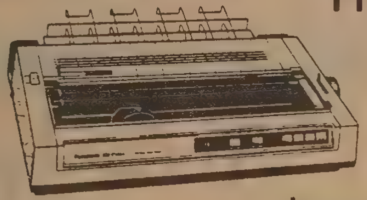

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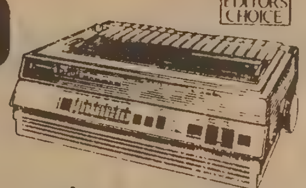

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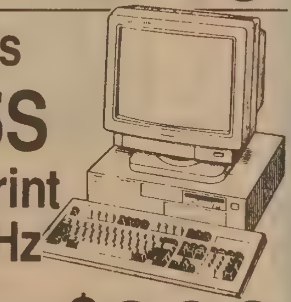

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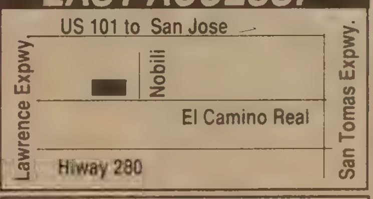

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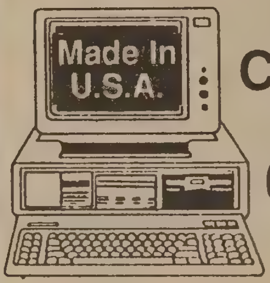

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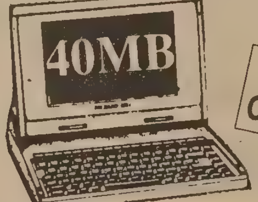

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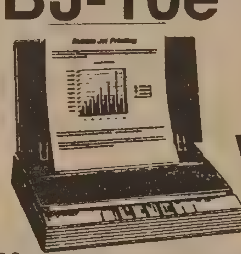

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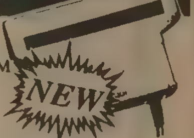

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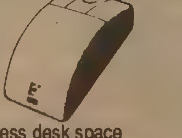

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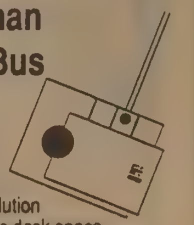

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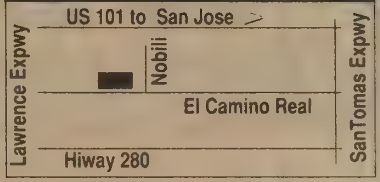

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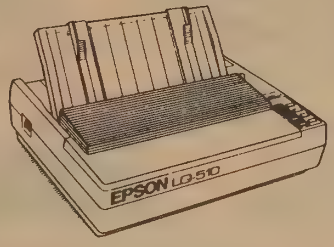

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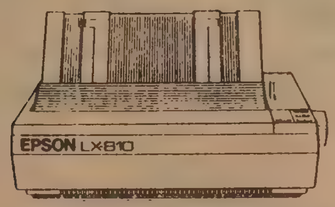

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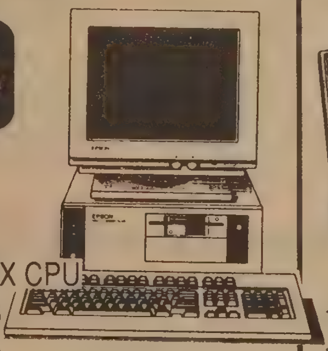

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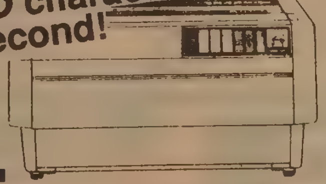

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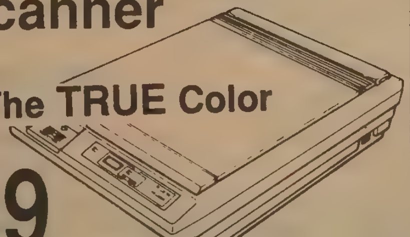

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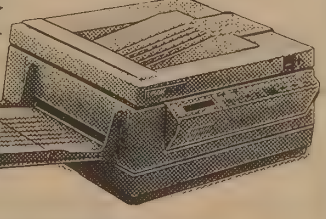

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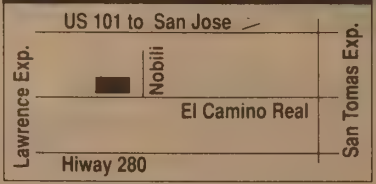

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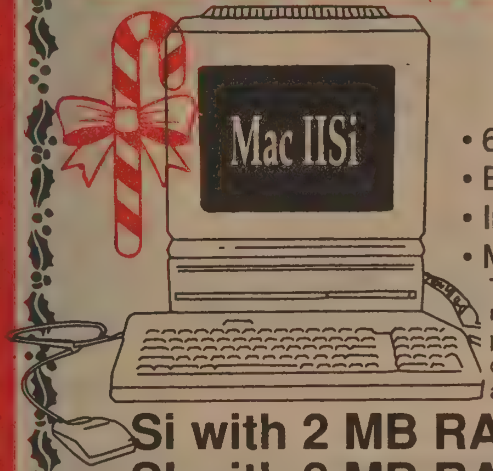

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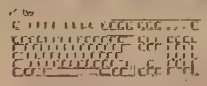

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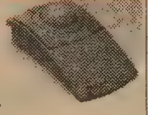

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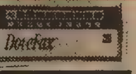

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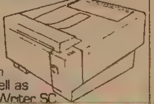

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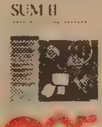

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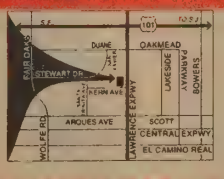

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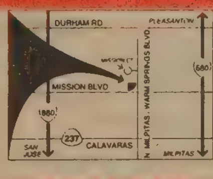

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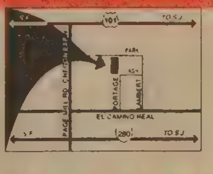

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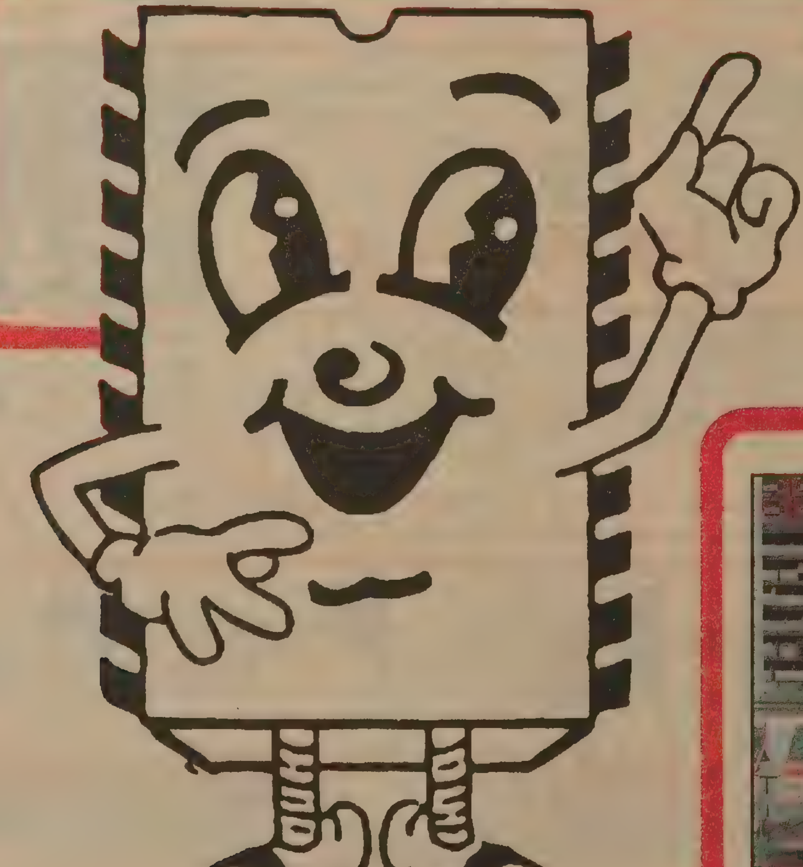

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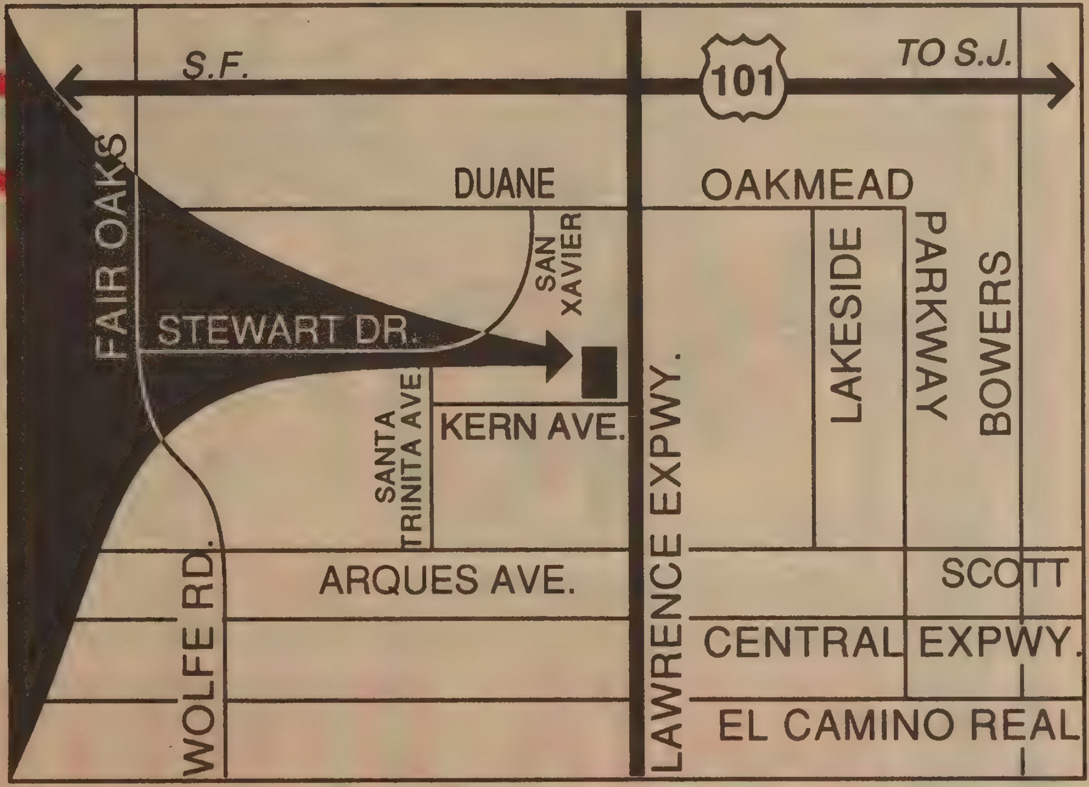
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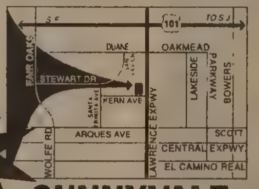

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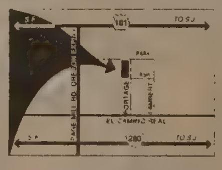

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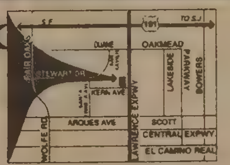

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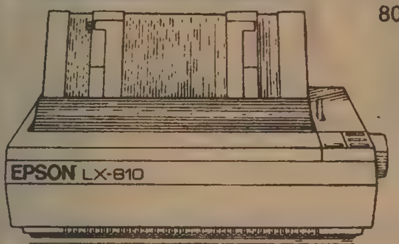

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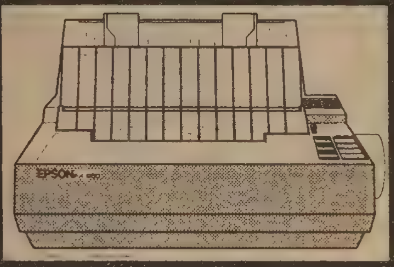

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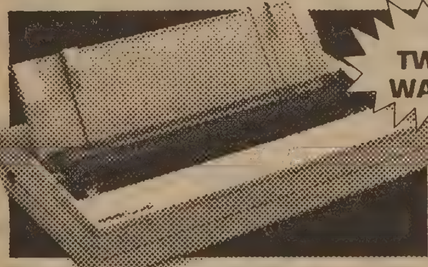

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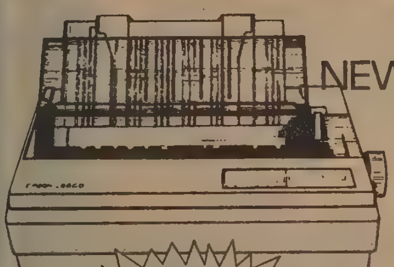

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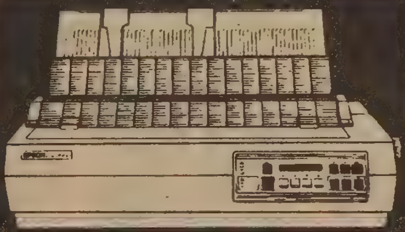

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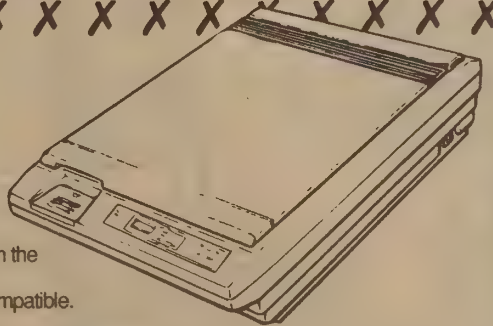

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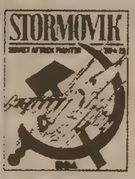

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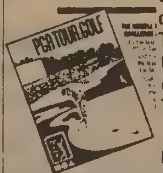

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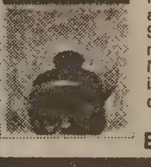

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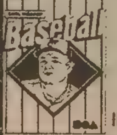

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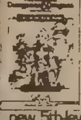

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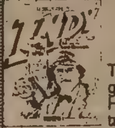

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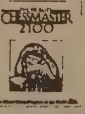

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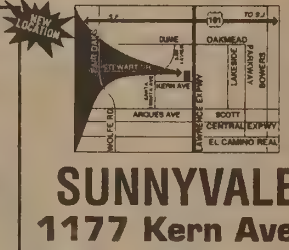

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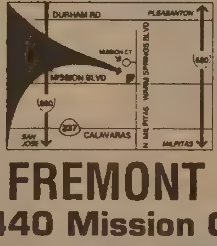

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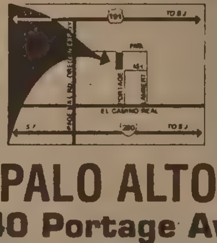

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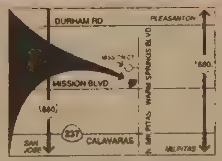

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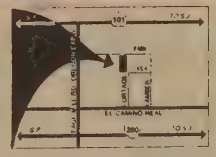

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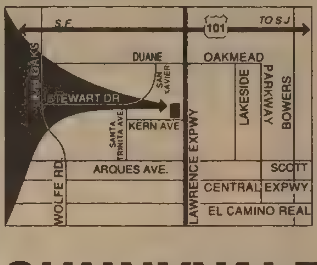
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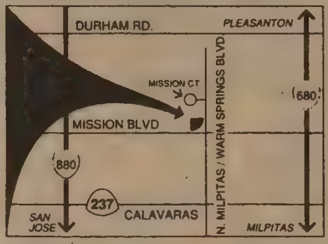
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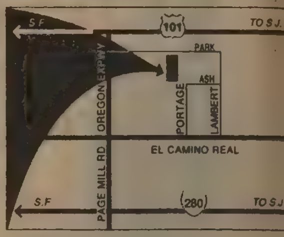
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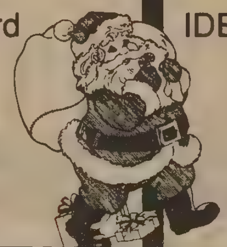

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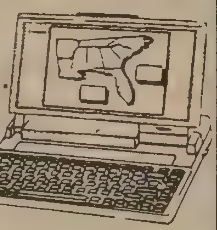

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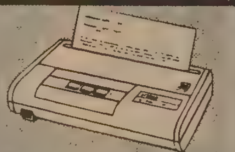

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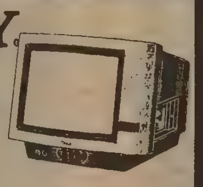

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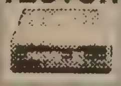

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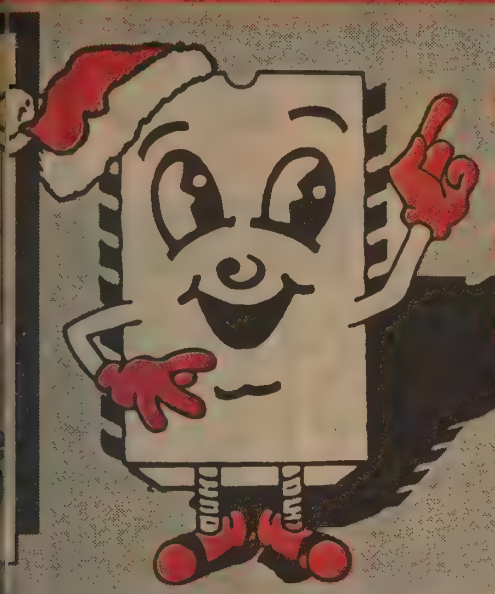

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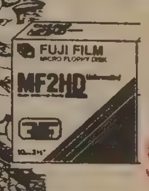

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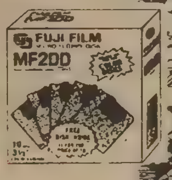

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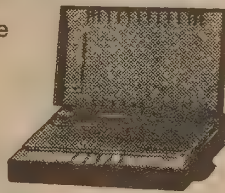

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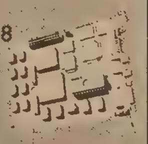

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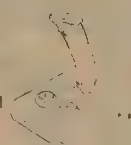

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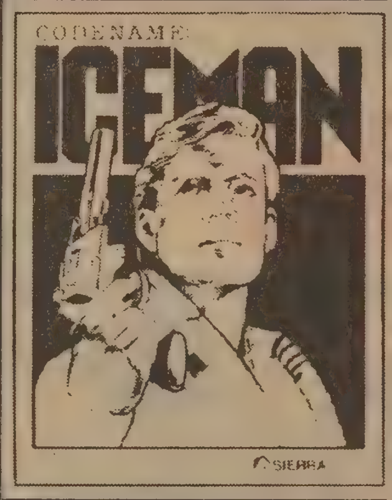
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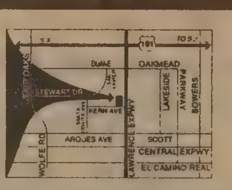
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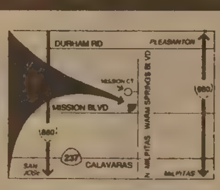
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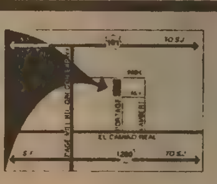
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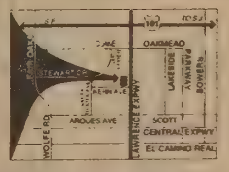

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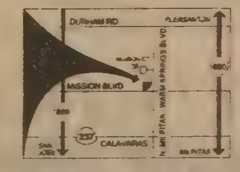

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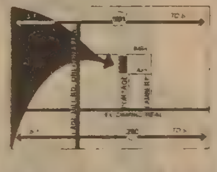

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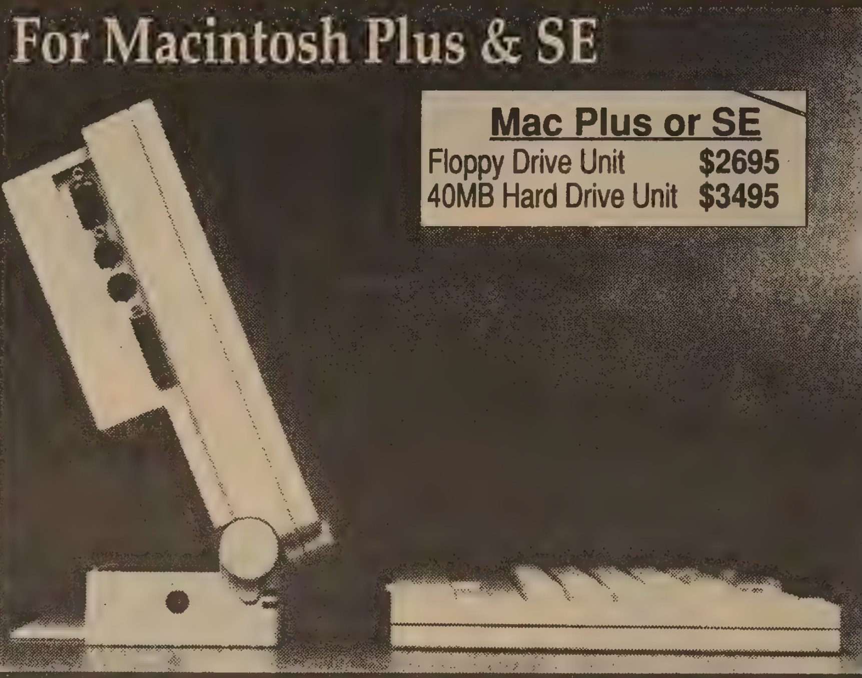

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Now set your Macintosh free

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Dimensions	12.3x7.8x3.6 inches
Weight	9.3 pounds (including hard drive and battery)
Screen	Backlit, black-on-white LCD 640x400 pixels
Processor	15Mhz MC68HC000
System Memory	1MB Standard Expandable to 2, 2.5, and 4MB
Keyboard	Macintosh SE layout, less numeric keypad Detachable, with infrared interface
Pointing Device	ISOPOINT, keyboard-mounted mechanical encoder for low power consumption Optional mechanical mouse
A/C Power Supply	120 VAC, 60Hz, wall mount transformer
Battery	Type: Sealed Operating time: up to 3 hours Charging time: less than 5 hours
Interfaces	Printer port Communications Port Host adapter/expansion port (provides interface to host Macintosh and optional SCSI adapter cable and optional external 1.4MB Floppy Disk Drive) External LCD port SCSI adapter cable
1.4MB Floppy Disk Drive	Reads and writes 800KB and 1.4MB Macintosh-formatted disks Reads and writes 720KB and 1.44MB MS-DOS formatted 3.5" disks
40MB Hard Drive (optional)	Average seek time: 28msec Maximum transfer rate: 449 KB/sec
1-16 MB Silicon Drive (optional)	Average seek time: 0 Maximum transfer rate: 4MB/sec Battery backup of data: 10-25 days
Environment	Operating temperature: 15° to 35°C (59° to 95°F) Storage temperature: 0° to 40°C (32° to 104°F) Relative humidity: 10% to 90% (non-condensing)
System Capability	Outbound 125 Series: Macintosh Plus and Macintosh SE

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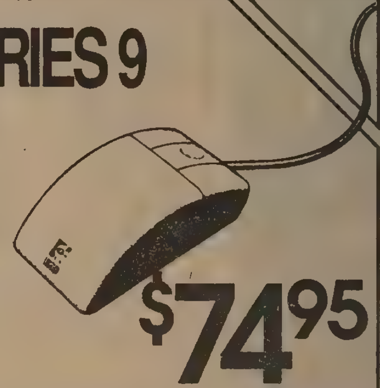

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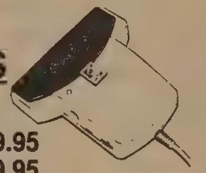

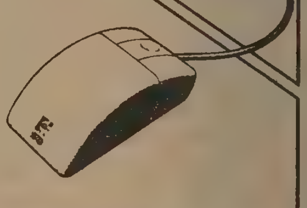

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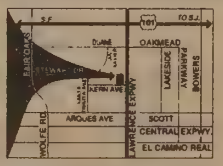
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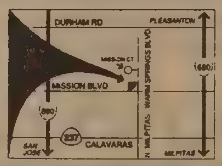
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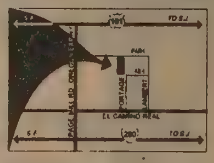
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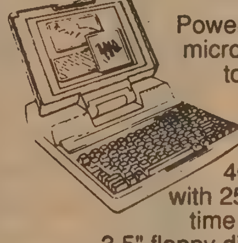

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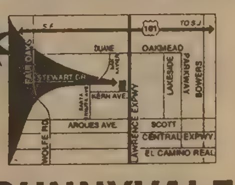

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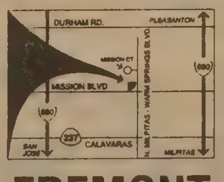

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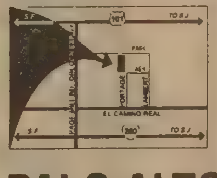

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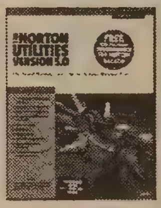

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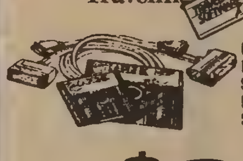

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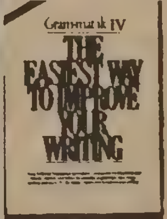

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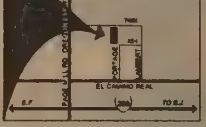

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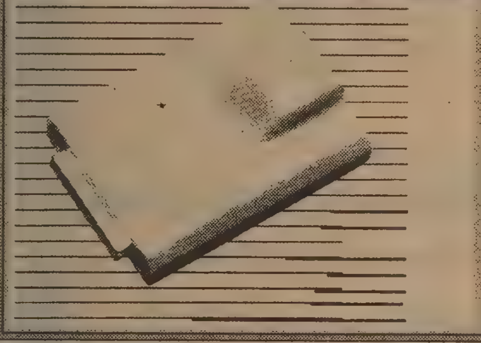

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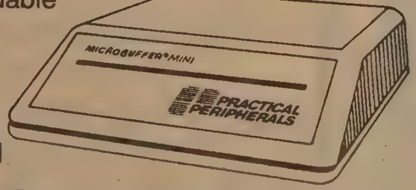
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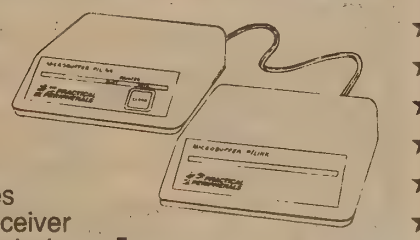
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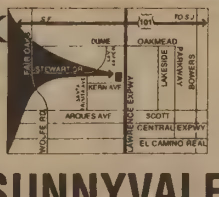
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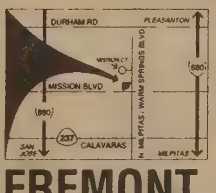
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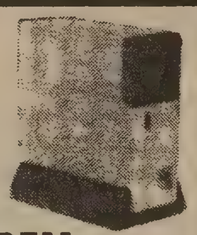

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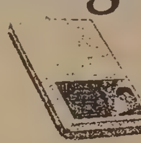

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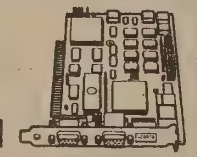

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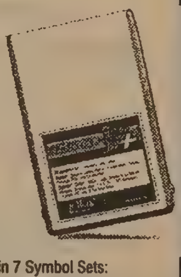

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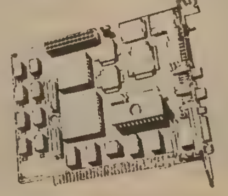

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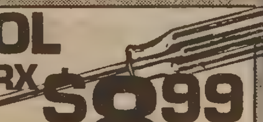

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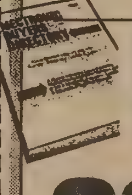

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ulimit And File Size

Or, How Not To Bump Your Head On A Virtual Ceiling

BY BENNETT FALK

UNIX

No computer can do everything.

A user sitting at the keyboard of any particular machine will eventually discover, through trial and error, some things that the machine does well, some things it barely tolerates, and others that it cannot do at all. All these things describe a kind of room in which the user lives. How confining this room is depends simply on how frequently the user runs into its floors, ceilings, and walls.

No operating system can completely remove the limits of this virtual living room, but a good operating system will provide some control over the room's architecture and decor. Naturally, the users most interested in remodelling are those who have bumped into enough obstacles to know the shape of the room they live in.

Take, for example, the matter of ulimit.

A SHORT HISTORY OF ULIMIT

Several early implementations of the UNIX System V operating system had an unrealistically low value for the maximum size of a file created by a user. This limit (called "ulimit") is enforced by the UNIX kernel, and any attempt by a regular user to build a file larger than the allowed ulimit would simply fail with an I/O error. The file would grow to the allowed size and no further, regardless of the space remaining in the filesystem.

For the unsuspecting user, an encounter with ulimit can be a baffling experience, not unlike running headlong into a wall of clear glass.

There are several ways to get around the constraints imposed by a low ulimit. The UNIX C libraries contain a "ulimit" function that can be called in a C program to display or (in the hands of the super user) modify the value of ulimit. Bourne shell users will find a built-in command ("ulimit") that allows any user to print the current ulimit and optionally lower it. As with the C function, only the super user can raise the ulimit.

One of the early challenges of System V was to develop a program that could run under the super user's ID long enough to set a more generous ulimit, then spawn a user-specified shell or command that would run under the ID of a regular user and inherit the new limit. Lots of would-be system administrators rose to the challenge. But while this kind of programming is fun to do, programs that set their effective user ID to that of the super user are a security risk.

A more mundane solution to the ulimit problem is simply to modify the UNIX kernel to reflect a more generous maximum size for a user file. There are about 120 different parameters that a system administrator can "tune" in the System V UNIX kernel, and one of them (named "ULIMIT") controls the system-wide value for ulimit.

In the early stages of System V's development, this was a more intimidating alternative than writing "setuid" programs. The procedure for building a new kernel was less robust than it is today, and the machines on which System V ran typically served large numbers of users and could not be rebooted indiscriminately.

And, of course, myths sprung up about the process of changing kernel parameters: that it was dangerous to do so while the system was running in multiuser mode; that it was painfully easy to produce an unrunnable kernel; that the success of kernel rebuilding depended on having a special knowledge possessed by only a select few. The popular conception was that kernel rebuilding was fraught with peril.

Of course, things changed. Many vendors now ship System V configured with a very generous ulimit. The default on SCO UNIX System V is 2091752 blocks (each block is 512 bytes). Interactive's version of UNIX has a default ULIMIT of 4096 blocks, representing a maximum user file size of 2Mb. Even this lower limit is adequate for most things a user needs to do.

Any discrepancy between the running system and its configuration files should be well understood before further modifications to kernel parameters are attempted.

Copyright © 1990 by Bennett Falk. All rights reserved. Bennett Falk lives in the Bay Area, writes when he can, and hopes for the best. He works for Sybase, but the opinions and attitudes expressed are his own.

With UNIX on workstations and PC-class computers, the impact of rebuilding a kernel and rebooting is less dire than it is at larger installations. Kernel building must still be done with care, but doesn't require a great deal of specialized knowledge. The smaller UNIX machines have also made the system administrator's responsibilities accessible to a larger audience.

Finally, procedures for modifying kernel parameters have stabilized to allow vendors like SCO and Interactive to provide menu-driven utilities to automate many of the steps in building a new kernel and to document the business of modifying system parameters.

Special attention should be paid to any error messages displayed during the compilation and relinking of the new kernel. A kernel that produced errors during linking should not be installed.

All these things served to demythologize the process of modifying a UNIX kernel. Make no mistake: this is a serious undertaking, and *no one* should attempt to modify operating system parameters without first reading the manufacturer's documentation on making changes to the UNIX kernel. Still, the process is not as dreadful as it once seemed.

KERNEL CHANGES IN THE MODERN WORLD

The basic mechanism for making kernel changes consists of four steps. First, verify the existing value for ULIMIT in both the system configuration files and the currently running kernel. In SCO UNIX, for example, parameter values in the existing configuration files can be displayed with the "configure -x" command or by using the "sysadmsh" utility and navigating to the System->Configure->Kernel->Parameters menu.

The values used by the currently running system may differ from the values in the configuration files. The super user can invoke the ominously named "crash" utility to print values for most of the modifiable parameters in the present system. Any discrepancy between the running system and its configuration files should be well understood before further modifications to kernel parameters are attempted.

Next, edit the kernel configuration files to reflect the new ULIMIT value. With SCO UNIX, the "configure" program is also used to do this editing. With Interactive UNIX the "kconfig" utility is used to edit the kernel configuration files. Even though SCO and Interactive have their own tools to manage access to the kernel configuration process, the configuration files and the parameters they contain are standard: SCO UNIX and Interactive UNIX have the same set of modifiable parameters.

After editing, the configuration files must be compiled and linked with the object modules that make up the kernel. SCO now uses a shell script called "link_unix" to drive this process. In SCO's sysadmsh the System->Configure->Kernel->Rebuild command invokes link_unix. Special attention should be paid to any error messages displayed during the compilation and relinking of the new kernel. A kernel that produced errors during linking should not be installed.

Finally, the system must be rebooted with the new kernel in the root directory. The old kernel should be saved and its name noted before a reboot is attempted. If, for any reason, the new kernel is unusable, it is possible to boot off the previous kernel if it is located in the root directory and its name is known.

THE ARCANE ART OF KERNEL MODIFICATION

More than any other feature of the UNIX system, ulimit provides the occasion for users to confront the question of how best to tune the UNIX operating system.

Unfortunately, modifications to ULIMIT are not particularly representative of kernel modifications in general. As puzzling as they may first seem, the symptoms of an inadequate value for ULIMIT are unambiguous, and increasing the ULIMIT will alleviate those symptoms. Most kernel parameters have a much less clear-cut effect on the behavior of the system. Some configurable items in the kernel have informative error messages that pinpoint inadequate kernels. (So the message "WARNING: i-node table overflow" indicates that the kernel may not have an adequate value for the NINODE parameter.)

The vast majority of tunable kernel parameters have neither definite symptoms nor error messages. Discerning the need to modify these parameters requires some skill at interpreting the output of the "sar" utility which reports system activity.

The vast majority of tunable kernel parameters have neither definite symptoms nor error messages. Discerning the need to modify these parameters requires some skill at interpreting the output of the "sar" utility which reports system activity. To the novice this skill is not unlike the ability to read the entrails of a black peacock sacrificed at midnight.

Clearly, it's a topic that requires some demythologization of its own. In the meantime, if you haven't bumped your head, don't raise the ceiling. ■

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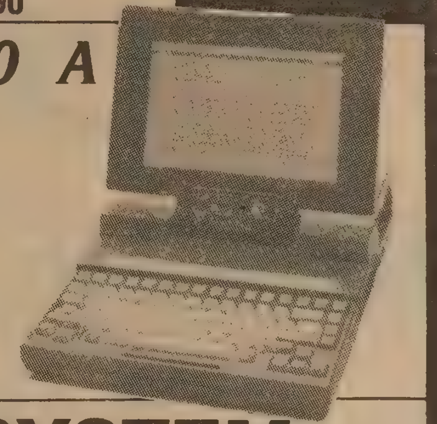

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Classy, Affordable:

The Macintosh Classic

BY MICHAEL ROBIN

With every delay in the introduction of new lower priced Macintosh computers, rumors multiplied and skepticism grew. Would it really be more affordable? What would Apple leave out to reduce the price? Would this be Apple's version of PCjr or PS/1?

But seeing the new Macs and using the new Macintosh Classic, my skepticism vanished. The Classic gives Apple a machine in the same price range as many PC clones, without sacrificing the features we expect in a Macintosh. It keeps the best of the original formula to introduce a solid, lower cost Macintosh computer.

A LITTLE HISTORY

Six models have been based on the original Macintosh design: the Mac 128K, 512K, 512KE, Plus, SE, and SE/30. The Mac 128K, unveiled during the Super Bowl in 1984, introduced us to a new concept in personal computing. Later, the Plus and SE built on the success of earlier models, each for a time enjoying status as the best-selling computer in the US.

The Classic follows in this tradition, offering a compact computer with the power and ease of use to do everything from word processing and spreadsheets to page layout and design to creating sophisticated graphics.

Replacing the Plus and the SE, the Classic is a streamlined SE at roughly half the price. It uses the same 8MHz Motorola 68000 processor and includes many of the same features.

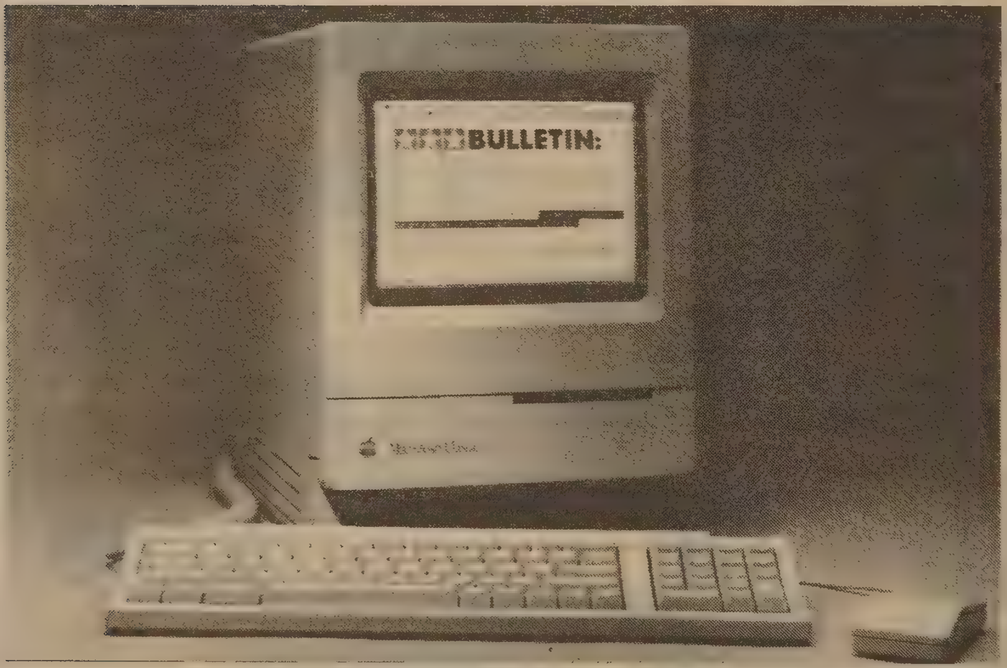
WHAT'S DIFFERENT?

For the everyday work of word processing and database maintenance, the Classic seems to be a little faster than a Plus or SE. I tend to believe the performance improvement has more to do with the new hard disk, at least when compared to the SE. The new hard disk is also significantly quieter than the internal hard disk Apple installed in my SE several years ago.

The Classic comes with a new Apple keyboard I find much more comfortable than the one on the Plus, but a little softer than the standard SE keyboard.

Overall, the Classic is quite similar to the machines it replaces—the Plus and SE. The most striking difference is the price.

In order to get that lower price, Apple has made some changes. The first was in corporate pricing policies, making the decision to sell lower priced machines with smaller profit margins. Once that decision was made, design changes were made to cut costs. Apple has made a handful of modifications to the SE's architecture in creating the Classic, but it still includes the features that define the Macintosh computer.



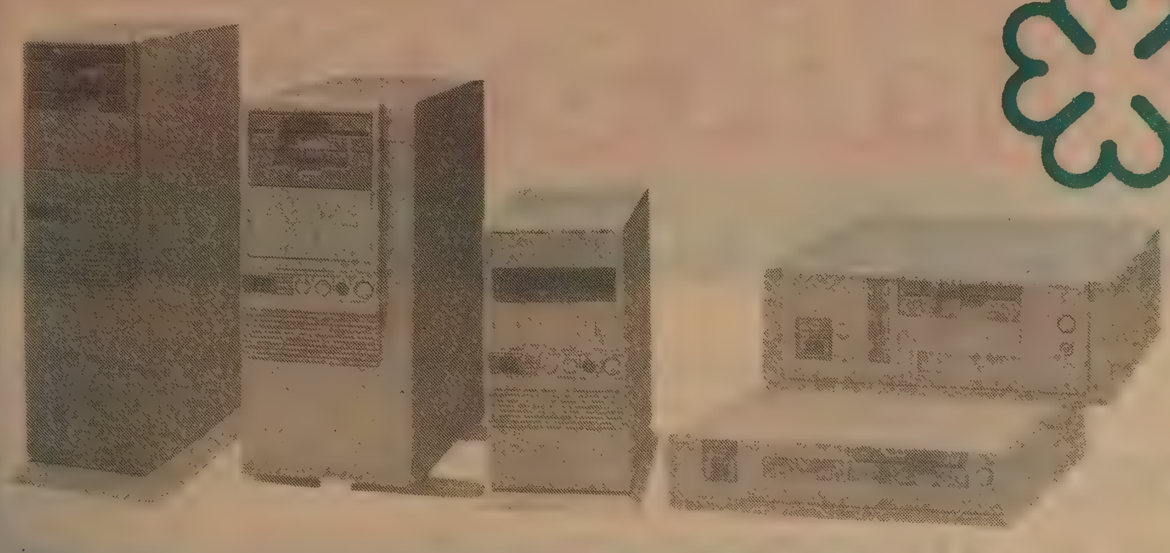
Apple's new budget-priced Mac Classic offers solid Mac features and good performance.

> **At around $1,000 this is a great computer at a great price. At a lower price—either dealer sales or student discount—who could pass this by?**

The Classic has a single floppy drive, rather than two. There's no hard disk light, and the display brightness knob has been moved inside, onto the Control Panel. There is only a single ADB port on the back, and the internal expansion slot was removed.

In the SE, the internal hard disk replaces the second floppy drive. Most SE owners have an internal hard drive, so they're really using a configuration like the hard disk version of the Classic. If you need a second floppy drive, there's still a port on the back for it.

Not having a hard disk light means you're not as able to monitor what the disk is doing. If this is something that bothers you, it's easily resolved. Norton Utilities, for example,



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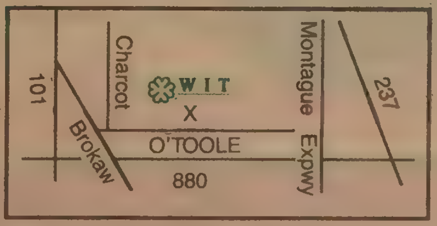

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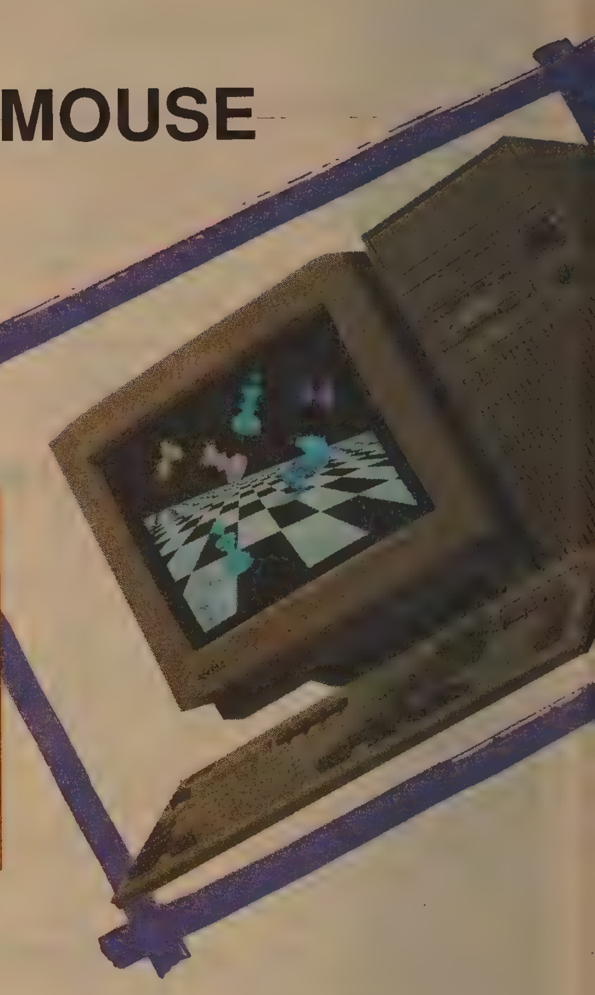

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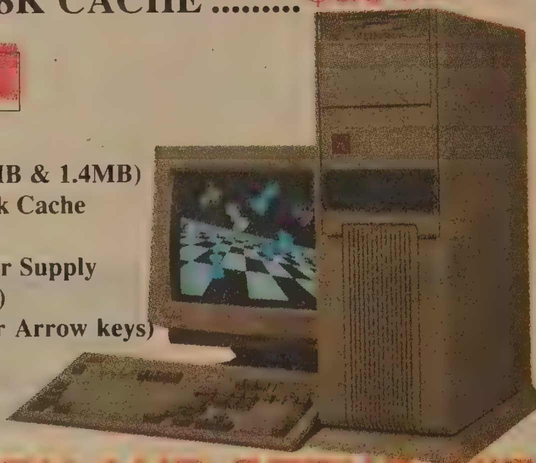

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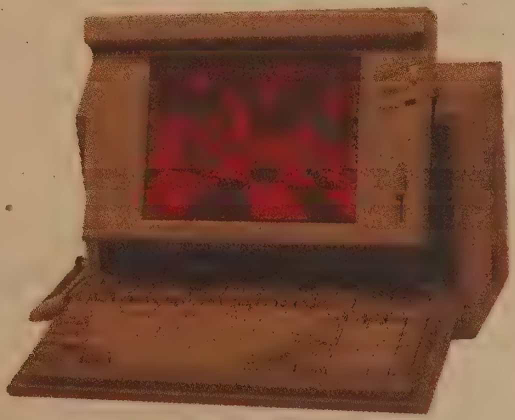

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already includes a disk light icon that gives the same information, and other utilities with this feature will surely appear if people decide they miss having that light.

Apple also chose to build one less ADB port on the back. Mostly, this means you'll have to plug the mouse into the keyboard rather than the back of the computer. The keyboard, however, still has two ports to allow you to have the mouse on the left or right.

Buyers, first-time or otherwise, should be more concerned about the Classic's lack of an expansion slot. Apple reps tell me they've found that 90% of SE owners do not use this slot. In the quest to lower production costs, therefore, Apple decided to drop it.

Replacing the Plus and the SE, the Classic is a streamlined SE at roughly half the price. It uses the same 8MHz Motorola 68000 processor and includes many of the same features.

Time will tell if this was the correct decision, but I'm happy having the option in my SE. The two most common uses of the slot are for an accelerator board or for an external color or two page monitor. Currently these are not options for the Classic. How long will it be before someone introduces a solution? How expensive will it be?

The redesigned logic board in the Classic is roughly half the size as the SE's. It is not only smaller with fewer parts, but has circuits mounted on both sides of the board. This means, for example, that 68030 upgrade board must be redesigned to fit into the Classic. Undoubtedly when there are enough Mac Classics sold, someone will make a board to give more power and speed, but there is currently no upgrade path for this machine.

There's one other missing feature you should know about. An often overlooked, underappreciated feature of the Macintosh is the universal self-setting power supply. This means your Macintosh computer can be plugged directly into almost any outlet around the world, without worrying about finding the appropriate voltage converter. If you found yourself tranferred to Italy and wanted to take your Mac, you wouldn't need to worry about European electrical systems. (If only the coffee pot was this easy.)

The Classic (and the other new Macs) do not have this power supply; it's US house current or nothing. Granted, the majority of us will probably never need to use this feature, but traveling Mac users need to be aware of the change.

STRONG AS EVER

However, this is a true Macintosh, providing standard built-in capabilities not found in other systems. The Classic will run all Mac applications, as well as MultiFinder (when the second megabyte of RAM has been installed) to allow multiple applications to be opened concurrently. Other standard features almost taken for granted by Macintosh owners include audio-out capabilities, AppleTalk networking, and a consistent interface.

With the introduction of the Classic (and the Plus no longer in production) 1.4Mb SuperDrive floppy drives and ADB (Apple Desktop Bus) ports are standard across the entire Macintosh product line. SuperDrive is capable of reading and writing MS-DOS disks. As PCs switch to 3.5" floppy disks, SuperDrive makes file exchange a quick and smooth operation.

Standardized ADB ports let you easily change the keyboard and mouse between Macs. The rest of the ports on the back are also the same as on the SE: an external floppy disk drive port, a SCSI port, mono audio-out port as well as a printer and modem port.

The Macintosh Classic comes in two configurations. Both include a new Macintosh keyboard, a mouse, one internal 1.4Mb internal SuperDrive floppy drive, System software (currently system 6.0.7), HyperCard 2.0, training disks and a one year warranty.

The Classic 1 with 1Mb RAM has a suggested list price of $999. The Classic 2/40 with 2Mb RAM and an internal 40Mb hard disk drive has a list price of $1,499. No sooner had the Classic been announced than people began to talk about lower street prices.

An often overlooked, underappreciated feature of the Macintosh is the universal self-setting power supply. This means your Macintosh computer can be plugged directly into almost any outlet around the world, without worrying about finding the appropriate voltage converter.

The Mac Classic is Apple's lowest cost Macintosh computer, retaining all the integrity of a Mac. Everyone I've talked with is interested in the Classic: current SE owners, PC users, and prospective computer buyers. At around $1,000 this is a great computer at a great price. At a lower price—either dealer sales or student discount—who could pass this by? ■

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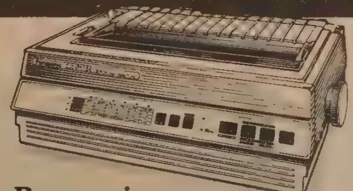

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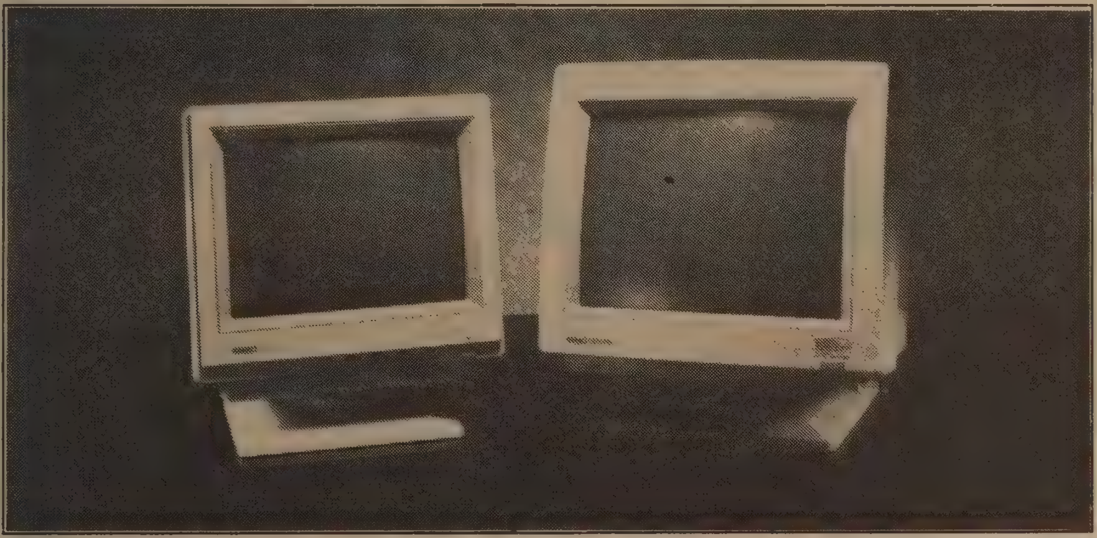

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Windows 3 For The DOS User

Tips, Tricks, And Enhancements

BY LENNY BAILES

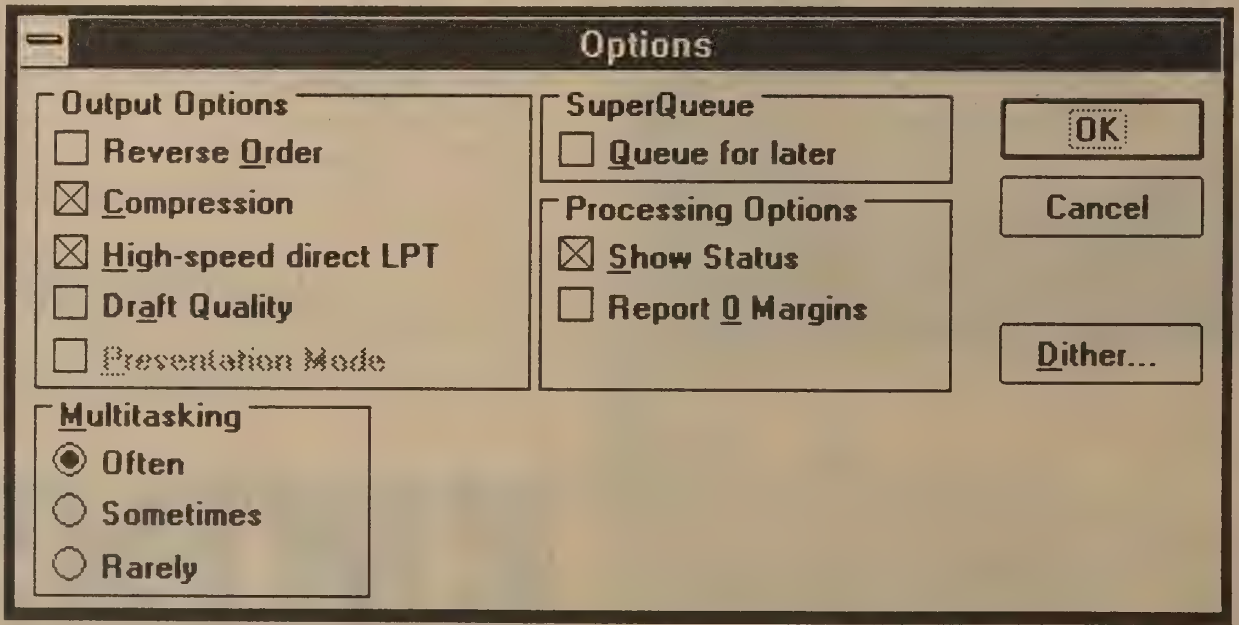
If Windows is truly the wave of the future, can we coexist with it in the present? We still have to do our daily file maintenance and productivity tasks. What happens when we quit PageMaker or Corel Draw! to set a file directory in order, or search for a document?

If you're moving to the Windows environment but don't want to lose the performance advantages you've come to expect from DOS, read on.

IMPROVING THE GUI

The Program Manager/File Manager setup in Windows is functional, but slow and bothersome compared to DOS shells like PC-Tools or the Norton Commander. The Program Manager shows a colorful facade, but the File Manager is where you go to update your hard disk or start programs from documents.

Using File Manager to mark files for copying means three to four mouse clicks accompanied by long disk-read pauses. And Windows won't remember where you are for the next session. To open File Manager to a default directory, you must set up a time-consuming Recorder macro. If you switch back to the Program Manager to use Windows accessories, this means more keystroke/mouse clicks.



Output Options
☐ Reverse Order
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☒ High-speed direct LPT
☐ Draft Quality
☐ Presentation Mode

SuperQueue
☐ Queue for later

Processing Options
☒ Show Status
☐ Report 0 Margins

Multitasking
● Often
○ Sometimes
○ Rarely

Superprint lets you compress data to reduce print time, or queue a job to print later.

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Lenny Bailes is a teacher in the Bay Area. He has been writing about personal computers since 1987. He does PC and Macintosh consulting ad product testing, and can be reached on the WELL (415/332-6106) as "jroe" or at (415)285-6232.

Command Post and Pubtech File Organizer are two file managers designed to improve on Windows' included tools. Both systems give you access to all Windows functions in one interface. They reduce the number of pull-down choices, clicks and keystrokes you have to go through to get a job done.

Command Post is a text-oriented shell based on the MS-DOS Executive of Windows 2. Command Post offers a superset of pull-down menu options. Users can add custom menus to run their own DOS or Windows tasks.

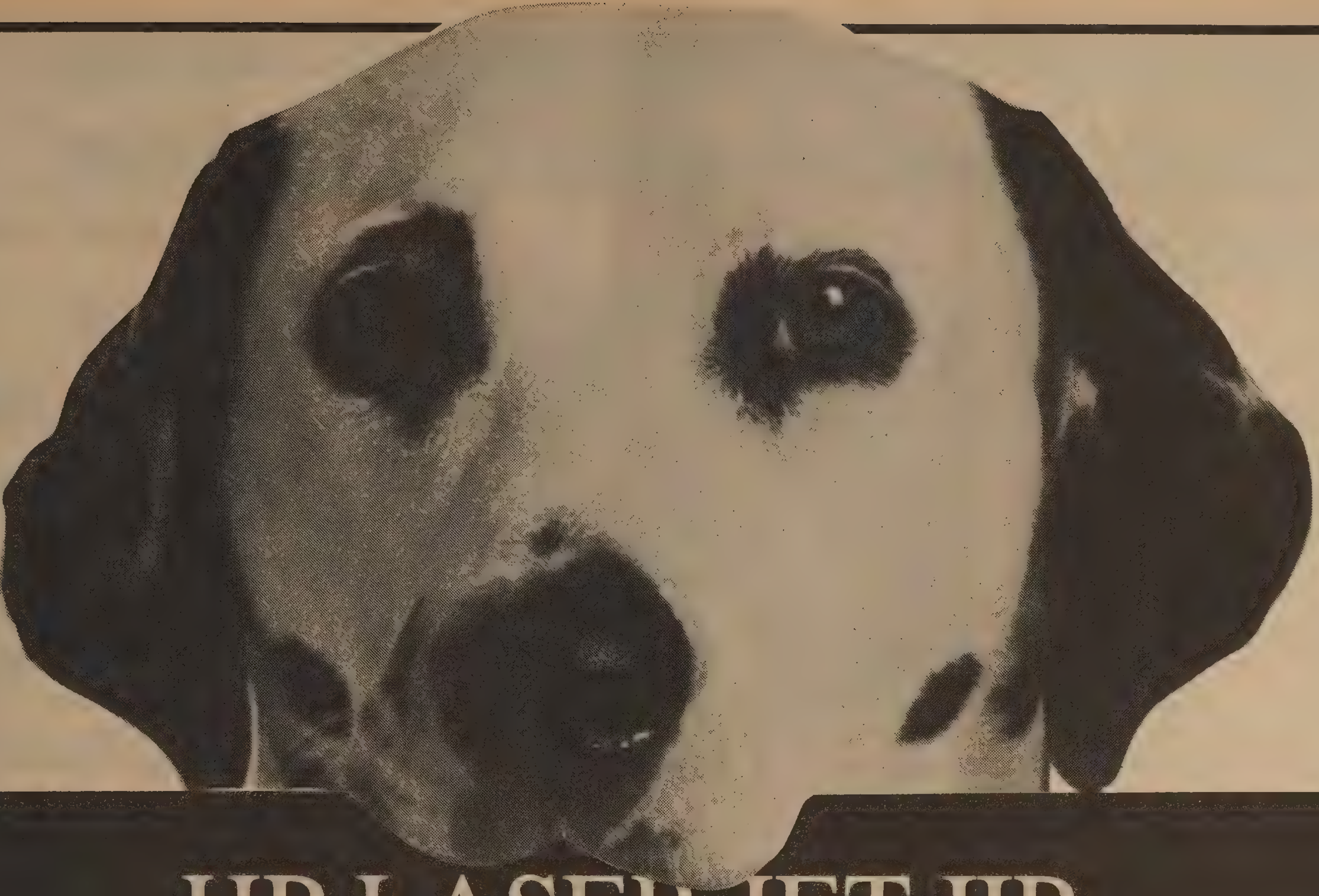
Using Command Post is like being in a speedier File Manager. Program Manager Groups are accessible from menus. The "View" menu combines the File Manager's view options with the Program Manager's "Window" options. You can stack or tile your windows, set display by name, date, or size, all in one operation.

Command Post's author, Morrie Wilson, includes a few extra menu options to illustrate what you can do for yourself. The Subdirectories menu toggles the display between all subdirectories or Windows-only areas. One of the menu choices is "How do I add this stuff to my menus?" Users can add their own help options, related to individual office needs. Wilson has been working on this shell since the days of Windows 2. It presents a no-nonsense approach to using Windows to get work done.

PubTech File Organizer: We said in the first installment of this series that Windows Program Manager and File Manager, together, won't add up to the Macintosh Finder. With the PubTech File Organizer for Windows you can come pretty close. The File Organizer combines Program Manager and File Manager features, to give you a complete icon-based interface.

Drives and folders contain icons for true DOS subdirectories. The program comes with over a hundred different icons, and any icon can be assigned to any file or group of files. You can make new icons with Windows Paintbrush or transfer them from other sources.

On installation, the program copies the



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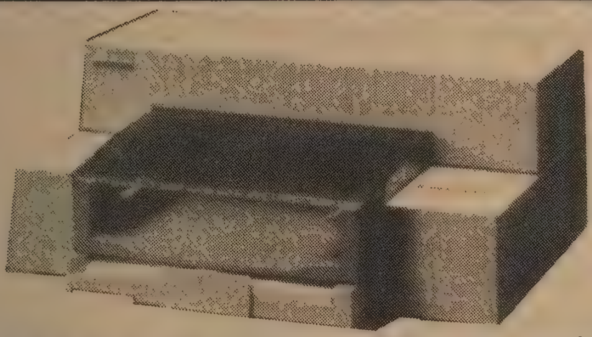

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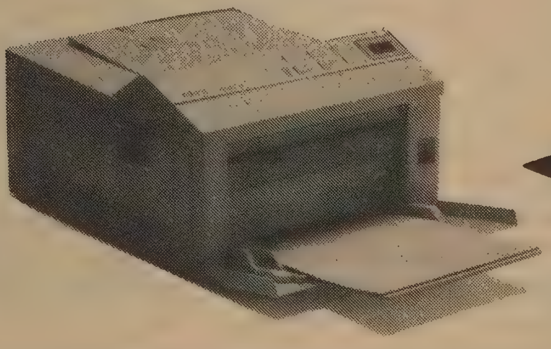

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> **Windows Program Manager and File Manager, together, won't add up to the Macintosh Finder. With the PubTech File Organizer for Windows you can come pretty close.**

icons associated with Windows apps and assigns a series of default icons to DOS programs. You can rearrange icons or groups of icons, launch programs, or drag files from folder to folder. As with the Mac, you can open multiple folders, and leave applications or documents on the Desktop. File Organizer remembers your Desktop the next time you start Windows. You can quit Windows with applications running, and File Organizer restarts them in the next session.

One of the differences between Macs and PCs is the plethora of overlay and auxiliary files used by MS-DOS programs. These can make folders look a bit cluttered. File Organizer can selectively hide files from view to create a more Mac-like appearance. Hiding unnecessary files also increases the speed with which Windows opens folders and redraws the screen.

The Windows interface under File Organizer duplicates most of the Macintosh Finder functions. (Yes, there is a trashcan—and an undelete option if you empty the trash by mistake.)

With File Organizer, Windows' complementary features begin to stand out. The Mac doesn't let you iconize and restore active applications. The Finder doesn't have a directory-tree for wading through nested folders. The Mac won't let you start an application by dragging a document file over a program icon (though it will let you start the application by clicking the document). File Organizer has these features and can start multiple applications simultaneously. You select a group of icons and double-click on one.

One really neat feature Apple should take note of: File Organizer can remember multiple desktop configurations with different folders open and different applications loaded. You can switch between different desktops by clicking on a desk icon. If that's not enough for you, Windows and DOS applications can be launched from a pull-down menu or assigned to hot key combinations.

The File Organizer menu includes built-in find file and text search utilities. Useful DOS options built into the menu let you diskcopy or format floppies to any of the DOS floppy drive types. There's also a built-in backup/restore utility.

Other utilities let you reset the various Windows defaults without reading a dissertation on the Win.ini file. You can globally link applications with file extensions and icons. A full-featured text editor lets you remap the keyboard to conform with WordStar, Microsoft Word, WordPerfect, PFS Write, IBM Writing Assistant or Framework.

With Pubtech's File Organizer, Windows becomes almost liveable as a permanent operating environment. I use the word "almost," because Windows on a 20MHz 386 is still like using a Macintosh SE. Although it's exciting to have a functional user interface, experiencing the equivalent of a Mac IIcx will require significantly more powerful hardware. Users accustomed to near-instantaneous program loading, file saving and performance under DOS will want 33MHz machines and fast, expensive video cards to make Windows bearable.

IMPROVING PRINT PERFORMANCE

Another reason to think twice about using Windows applications for productivity is their print speed. For desktop-published documents with multiple fonts and graphics, printing with Windows can be drastically slow. Would-be Windows users must balance this against the advantage of superior, integrated font handling. Windows eliminates the need for separate font directories and installation procedures for each program. Still, the time spent downloading soft fonts and waiting for printouts can be disheartening.

Superprint is a Swiss Army knife utility for Windows and Hewlett-Packard LaserJet/PaintJet/DeskJet printers. (Separate versions are available to support CalComp, and Tektronix printers, Mitsubishi Color printers and Montage FR1 film recorders.)

Superprint can double or triple print speed in the background, allowing work to continue in the foreground. Windows' native drivers and Print Manager are replaced by a system that reads files faster and generates fonts on the fly from outlines. You no longer need to store individual point-sizes and type styles for each font. You save hard disk space in addition to getting increased print speed.

Superprint includes twenty-two scaleable typefaces from three different manufacturers. It converts outlines from Adobe Type I PostScript, Nimbus Q, Bitstream Fontware and Compugraphic Intellifont. You can make matching Windows screen fonts for any scaleable outline. Typefaces included in the box are Nimbus Sans, Roman and New Century Schoolbook, Bitstream Charter, and Compugraphic Futura in normal, bold, italic, and bold italic weights. Superprint can also use previously generated HP soft fonts, but won't make matching screen fonts from bitmapped fonts.

Superprint is divided into three modules, a printer driver, a spooler/manager, and a fontmaker/manager. Superprint's font manager/screen font generator works only with Windows 3. A limited version of the driver/spooler modules is included for Windows 2.xx.

In testing Superprint, I got good results with Word for Windows and Windows Write. Background printing with Ventura Publisher for Windows required some fine tuning. The SuperText Manager module had difficulty recognizing some off-brand soft fonts in HP format. I had no trouble with the included outline fonts, or soft fonts generated by Bitstream Fontware. Zenographics' technical support department was helpful in giving me information to fine-tune SuperPrint with Ventura.

With the options set for background printing, Ventura took from two to three minutes to let go of a complex page and let text editing resume. After being generated, the document spooled to the printer without decreasing foreground performance. The same page printed without Superprint tied up Ventura Publisher for ten minutes.

Superprint allows for nonstop foreground printing. This ties up the application, but finishes faster. Files can also be printed to disk and held in a queue. Queueing is the fastest option, if you want to work now and print later.

Version 1.1 of Superprint is due to be re-

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Windows on a 20MHz 386 is still like using a Macintosh SE. Although it's exciting to have a functional user interface, experiencing the equivalent of a Mac IIcx will require significantly more powerful hardware.

leased by the time you read this. It will include support for 9-pin and 24-pin dot matrix printers and be able to read Bitstream's new "Speed-O" font outlines. Windows screen fonts will be generated on the fly, instead of through a separate installation procedure.

UPGRADING THE WINDOWS DISPLAY

Windows' File Manager, accessories, and applications all compete for display space on a 640x480 VGA screen. This can make things a bit crowded. If you run Windows on a high resolution monitor, you get more room on the display. Windows can be run at resolutions of 800x600 or 1024x768 pixels. When memory is added to your graphics card, you can see 256 colors, instead of 16.

At 1024x768 resolution, Windows can display four full-sized applications simultaneously. Some 386 power users choose Windows as a multitasker for just that reason.

The basic Windows package lacks high resolution support for most VGA cards. Only Video 7 VGA and IBM 8514/a drivers come in the box. Users of other VGA graphics cards must get drivers from the card manufacturer or request supplementary disks from Microsoft. Microsoft has recently issued a seven-disk set of additional video and printer drivers for Windows 3. ATI, CHIPS Super VGA, Compaq, DGIS, Paradise and Video 7 cards are supported on disks 1 and 2.

OEM packages often bundle Super-VGA drivers for Windows with the card. Some companies maintain bulletin board systems and allow you to download the files. Windows drivers and utilities are also posted on public bulletin board systems. (See the list at the end of this article.)

When you get the drivers for your video card, you can install them by running through the entire Windows setup procedure.

There is a shorter way. You can copy the driver and OEM setup information to your \WINDOWS\SYSTEM directory and install it by editing the System.ini file. System.ini is located in the WINDOWS directory.

To run Windows in real or standard mode at 800x600, you need to change the display driver listed in System.ini's [Boot] section.

Replace **Display.Drv=VGA.drv** with **Display.Drv=**[New]**.drv** where [New] is the name of the new hi-res driver.

Running Windows in 386-mode or at 1024x768 requires a few more substitutions. Your drivers package should include a file called OEMSETUP.INF. This file contains information under categories called [Display], [VGA.GR3], [Sysfonts], [Fixedfonts], and [OEMfonts]. These categories correspond to section headings in Windows SETUP.INF file.

If you use a text editor to copy all of the information from OEMSETUP.INF to Windows' SETUP.INF, you will be able to switch graphics resolutions from inside of Windows. Click on the Windows Setup icon in the Main Program Group, and new menu choices for your added drivers will appear under "Display." You'll be able to switch back and forth between different resolutions without repeating the entire Windows setup procedure. (If tinkering with drivers makes you feel squeamish, remember, you can install the new drivers by reinstalling the entire program.)

Another way to switch between different resolutions for Windows is to keep multiple System.ini files stored under different names. I keep my original defaults in a file called 640sys.ini. To go back to ordinary VGA resolution, I use a batch file which copies 640sys.ini to System.ini. I preserve the 800x600 and 1024x768 settings in files called 800sys.ini and 1024sys.ini. ■

For desktop-published documents with multiple fonts and graphics, printing with Windows can be drastically slow. Would-be Windows users must balance this against the advantage of superior, integrated font handling.

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Mog-Ur's EMS	818/366-1238
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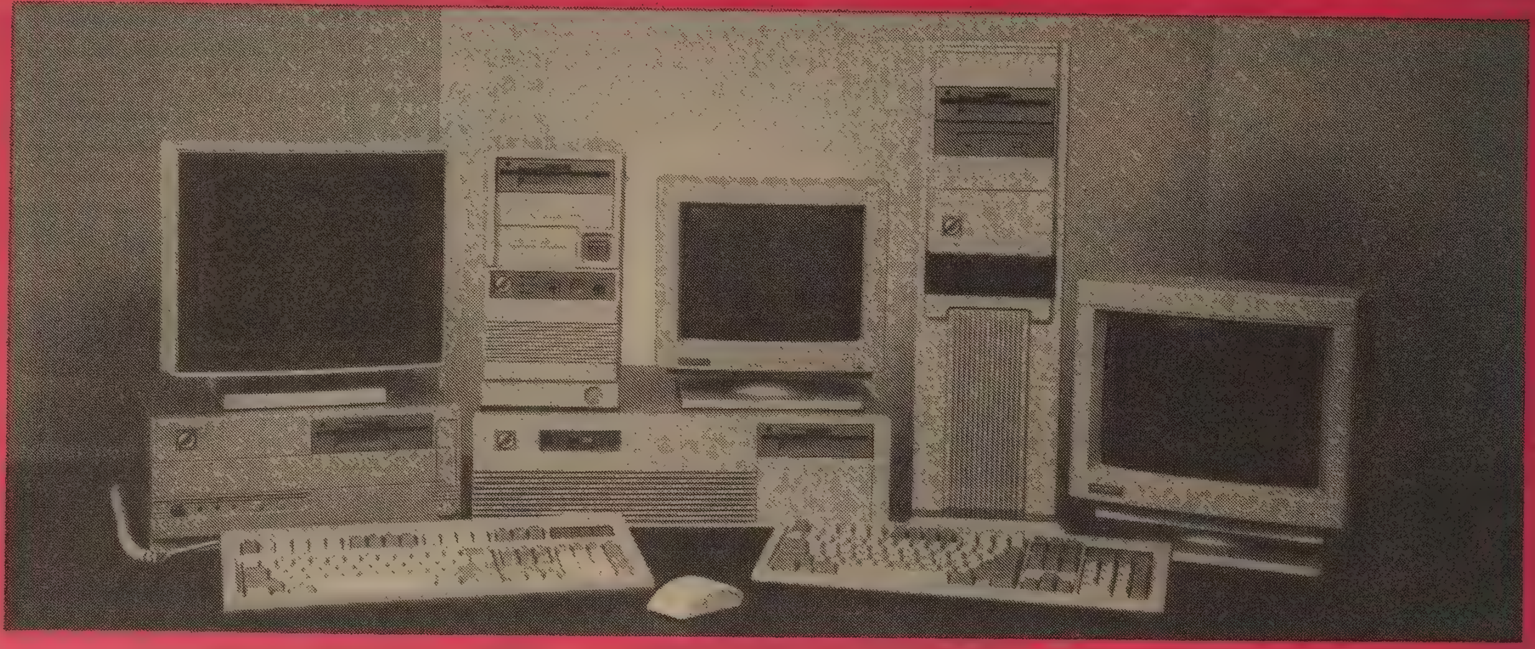

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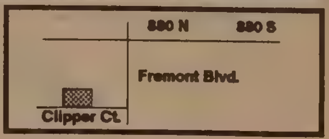

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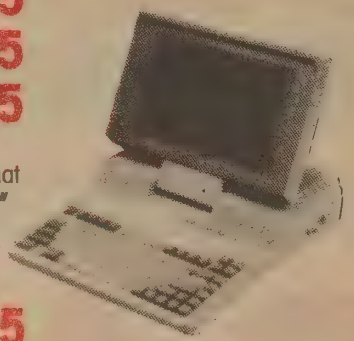

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Buying A PC Clone

Part I: Where To Buy

BY PAUL HOFFMAN

Ten years after the PC revolution took off, buying a PC is still a nerve-racking experience for most people. Even if you are a computer professional, you can agonize over what brand to buy, what features to get, and even where to go.

This two-part article should help allay some of these fears by giving you solid lists of what you need to think about when you buy. This section describes in detail how to choose a computer store. As you can tell from the ads here in *MicroTimes*, there's no lack of choices. After you have chosen a store, you have to choose what computer and what options you want; those will be covered in the next installment.

Picking a PC for a small company is more difficult than it is for a large corporation because small companies are much more money-conscious. A few hundred dollars' difference in the price of a clone may not be as important to a large company buying dozens of PCs at a time, and those companies usually get a volume discount anyway. For a small company or a person on their own, buying a clone means a significant financial outlay. Many large companies often have computer support departments, so buying a lemon is not as disastrous for them as it is for the individual whose livelihood might be totally dependent on the PC's health.

BRAND-NAME OR NO-NAME?

Your first major choice is whether you want a no-name clone or a brand-name clone. If you read the comparative ratings in journals like *PC Magazine* and *PC Week*, you'll see that there is often no speed or quality benefit from buying a brand-name clone, yet there is often a significant price penalty.

This is not to say that you should automatically go with a no-name clone—for many long-term reasons, a brand-name clone might well be worth the extra money.

A recent exhaustive survey of reliability and service by *PC Magazine* (September 25, 1990) punctured many long-held beliefs about the advantages of brand-name clones. The results showed that most vendors, large and small, had very high reliability ratings. In answer to the question "How would you rate your desktop PC for overall reliability?", the average rating was 89 out of 100. Ninety percent of the respondents gave their PCs one of two highest scores. The worst rating among the 27 companies was a 79.

These ratings were for brand-name and mail-order clones, not for the no-name clones you buy in stores. Still, it was interesting that the mail-order brands (which are often comparable to the no-name store brands) did almost as well as the brand-names like IBM, Acer, and AST. Commodore's PCs had much lower than average repair service and tech support ratings, but most of the other computers rated fairly comparably on these tests.

> **Good salespeople will ask you almost as many questions as you ask them. It is their job to be sure that you're a happy customer so that you come back when you want to buy a bigger or faster system.**

The major advantages of picking a brand-name clone are:

•Large companies change parts more slowly than small ones. This means that the repair department will have a better chance of having the parts you need in stock, even if you need them years from now.

•If the store where you bought your clone closes or is bought out, it is much easier to find someone who can fix your brand-name clone. The larger the manufacturer, the more repair outlets you can find near you.

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•The warranties on brand-name PCs are enforced by the companies. There is much less haggling with the store about whether or not they should fix a broken computer if it is a brand-name clone.

PRICE

Clones have become commodity items, and their prices reflect it. No-name clones often have very similar prices from store to store, assuming identical configurations and similar speeds. Price variations among brand-name clones are based mostly on the size of the store selling them and the type of service you can expect if you need it. Since the list price of brand-name clones is set by the manufacturer, computer stores are less sensitive to competition on these machines unless they can shave more off of the list than a competing store.

No-name clones almost always cost less than name-brand clones. How much less? That often depends on the quality of the parts that go into the no-name clone. Even among no-name clones, there are parts with better reputations (and thus higher price) than others. For example, there are many sources for BIOS chips, the chips that make software think it's running on an IBM PC. The better the BIOS, the higher the cost. A few manufacturers (including Phoenix, American Megatrends/AMI, and Award) have better reputations than other BIOS manufacturers, and can thus charge more for their chips.

> **Many problems that crop up in PCs are obscure but deadly. The longer someone's been working with a particular model, the more likely they are to recognize and fix recurring problems.**

Similarly, the chips making up the electronic "glue" that links the parts of the PC can come from a big-name firm like Phoenix or Chips and Technologies, or from a lesser-known firm. All of these choices, made by the store that puts together the no-name clone or the small firm from whom it buys them, affect the cost.

Other things affect price as well. The amount of money the salesperson makes directly affects the cost, as does the rent the store pays and the amount of advertising it buys. Smaller clone stores have few (if any) salespeople and usually pay almost nothing in rent; most of their costs come from advertising and promotion. Larger stores have higher costs that must be covered by higher prices and increased sales.

LOCATION

As you can see from the ads in *MicroTimes*, the Yellow Pages, etc., computer stores are everywhere. There are definite advantages to buying from a store that's close to your home or work (depending on where you will be using the computer). PCs, like other commodity electronics components, have a tendency to break at the least appropriate times. Your ability to get the PC back to where you bought it can significantly reduce the amount of hassle involved in getting your machine fixed and back in service.

Most desktop PCs and their monitors are quite heavy. If you believe in transporting them in their boxes (as most manufacturers recommend), you may need two people, since the boxes are quite large to accommodate sufficient padding. This makes it even more important that your store be close, or at least convenient by car. Some computer stores are in remote parts of industrial zones or secluded residential areas in order to save on rent. Others are easily accessible in downtown areas or have quick access to major freeways.

SALES STAFF

There are many choices to make even after you have chosen a brand. In order to make those choices, you need a competent salesperson to help make sure you're getting a system that matches not only your current needs but also your future ones.

Everybody's got horror stories about incompetent or incomprehensible salespeople; a good salesperson, on the other hand, is often one of your best assets in finding the system that's right for you. The salesperson has to have enough technical knowledge to turn your requirements into a sound recommendation. He or she must be able to translate that recommendation into something you can understand, so that you can compare it to systems offered by other stores. In other words, the salesperson has to have enough communication skills to be able to get a point across, as well as a genuine interest in doing so.

Don't settle for less. All too often, you can end up with a technoweenie who's unable to talk to anyone with less knowledge of the industry than his own (these people are almost always male), a concerned salesperson who knows little about what the store sells and is constantly running back to the technical people sequestered in the back room, someone who is just plain surly and arrogant, etc. If you find yourself in an uncomfortable situation like this, go elsewhere. The last thing you need is to come home with a bad mismatch because of a poor salesperson.

Good salespeople will ask you almost as many questions as you ask them. It is their job to be sure that you're a happy customer so that you come back when you want to buy a bigger or faster system, or another system for your office. A happy customer is also a great source of referral for new customers.

TECHNICAL SUPPORT

Sooner or later all PCs fail, and when they do, the vendor's technical support people are your best hope. Just because a store has good salespeople, don't assume that their repair department is also good.

Ask a few questions about the technical staff before choosing a store. A common problem with technical support staff is rapid turnover—since fixing broken PCs is not nearly as interesting as making new ones, people who repair PCs usually move on and up as soon as possible. This is often disastrous for the customer, since many problems that crop up in PCs are obscure but deadly. The longer someone's been working with a particular model, the more likely they are to recognize and fix recurring problems. This is particularly true with no-name clones, since the people putting them together often change parts once or twice a year. Continuity is a huge plus for a repair staff.

The people in technical support must also

Continued on page 234

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New Products

GAME REVIEWS

By Mike Markowitz

STRATEGO

Designed By: Ken McLeod
Published By: Accolade
For: Macintosh (1Mb, color or monochrome), IBM PC and compatibles (512K for CGA, EGA and MCGA, 640K for VGA). Amiga, Atari and Commodore 64 versions will be released later.

Stratego, published by Milton Bradley, is one of the great classic board games; simple enough for kids to enjoy, but deep enough for strategic masters to ponder over. Hard-core gamers can rejoice that Accolade has developed a software implementation that retains the look and feel of the original, while adding a few new twists.

Hard-core gamers can rejoice that Accolade has developed a software implementation that retains the look and feel of the original, while adding a few new twists.

Stratego is a game of deception and ambush, played on a 10 x 10 grid, with two impassible square "lakes" that divide the center of the board into three avenues of approach. The object of the game is to capture the enemy's Flag, while protecting your own. Like chess, Stratego requires each player to wage an offense and a defense simultaneously. There are two identical sets of forty pieces, each consisting of:

1 Marshal
1 General
2 Colonels
3 Majors
4 Captains
4 Lieutenants
4 Sergeants

continued

PRODUCT UPDATES

- **Apple** has released **Macintosh System software 6.0.7.** It is compatible with all Macintosh computers with at least 1Mb RAM. Available through all authorized Apple resellers, AppleLink and other electronic bulletin boards. ($49).

- **Borland International** is offering users of Microsoft C an upgrade to Borland's **Turbo C++ Professional** for $149.94, less than half the suggested retail price. This offer is valid for owners of Microsoft C or any PC-based C or C++ compiler through January 31, 1991. Borland International, Inc., 1-800-331-0877.

- **Central Point Software** is shipping **Copy II PC v6.0.** This new version, expected to be the final release of Copy II PC, supports the full line of PS/2 computers. Central Point Software, Inc., 15220 N.W. Greenbrier Pkwy, #200, Beverton, OR 97006. (503)690-8090.

- **Commodore** is offering a **$25 rebate** to purchasers of **AmigaVision**. This offer applies only to individual, standalone purchases, separate from a CPU, made at participating dealers between October 15, 1990 and January 31, 1991. Commodore Business Machines, Inc., 1200 Wilson Dr., W. Chester, PA 19380. (215)431-9100.

- **Computer Associates** will begin shipping in December **ACCPAC Plus Accounts Receivable 6.0.** Version 6.0 includes new features to provide greater performance and flexibility. SupportPlus maintenance subscribers and end-users purchasing AR, IC, OE, RI and SA between October 22, 1990 and April 22, 1991 will receive a full product upgrade at no charge. Other registered users of AR may upgrade for $200. Computer Associates International, Inc., 1-800-531-5236.

- **Cyrix Corp.** and **Micrografx, Inc.** are offering **$25 rebates** to customers who purchase a Cyrix FasMath coprocessor and Chrisma software package. This rebate program runs through December 31, 1990. Cyrix Corp., 1850 N. Greenville, Suite 184, Richardson, TX 75081. (214)234-8387.

- **Farallon Computing** has announced the shipment of **PhoneNet Liaison 3.0**, the only universal AppleTalk software router with Wide Area Networking capabilities. A site upgrade is available directly from Farallon for $75. The upgrade is free for all registered users who purchased Liaison after August 1, 1990. Farallon Computing, Inc., 2000 Powell St., Suite 600, Emeryville, CA 94608. (415)596-9020.

- **Innovative Data Design** has released **MacDraft v2.1**. There are two levels of upgrading to MacDraft v2.1. Upgrades for owners of MacDraft v1.2b or earlier costs $69. The upgrade for v2.0 costs $9.95. Innovative Data Design, Inc., 2280A Bates Ave., Concord, CA 94520. (415)680-6818.

- **Insignia Solutions** has announced **v1.4 upgrade** to the **SoftPC EGA/AT Option Module**, which greatly increases its performance for users running MS-DOS programs on a Macintosh. Registered owners of v1.3 of the Option Module will

continued on page 188

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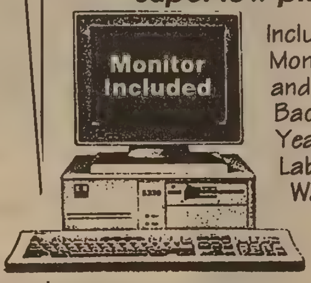

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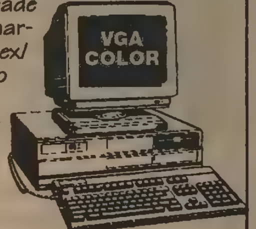

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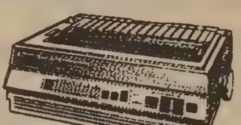

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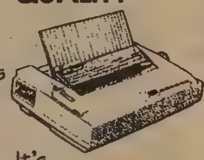

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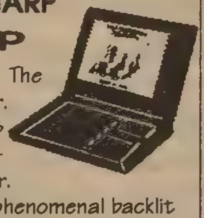

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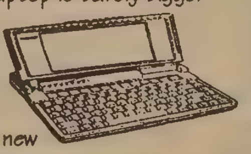

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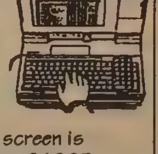

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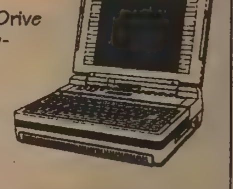

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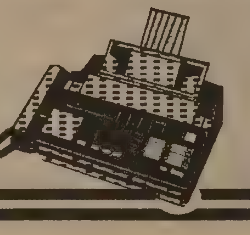

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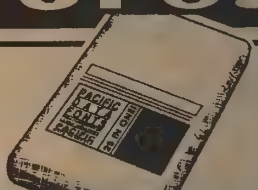

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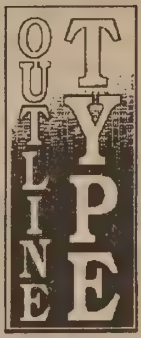

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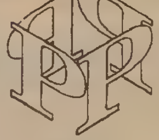

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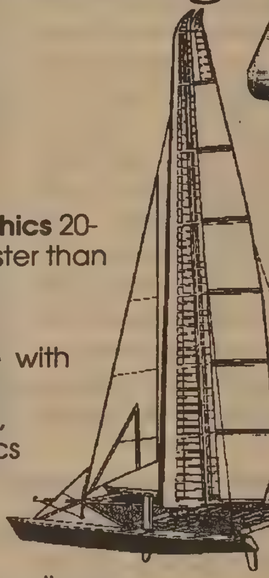

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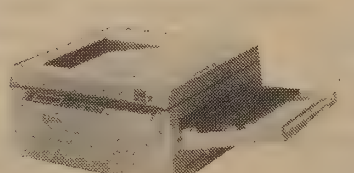

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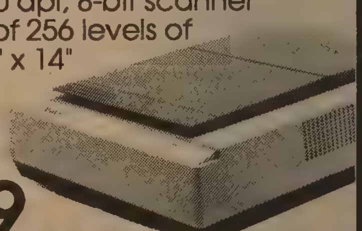

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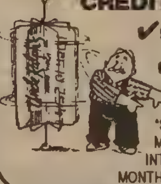

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Like the US Air Force, these outfits may be top-heavy with senior officers, but they can do a lot of damage once they get rolling.

Good design is simple. The people who designed DuckTales should be required to write that on the board five hundred times.

Unlike chess, you cannot see the identity of your opponent's pieces—they remain face down until one piece tries to move into a square containing an opposing piece. The higher-ranking piece is always victorious, regardless of who moved into the square. The Spy is the lowest-ranked piece, but it has the unique ability to assassinate the Marshal. Bombs cannot move, but destroy any piece that enters their square, except for Miners, who have the ability to "defuse" and remove them.

The Macintosh version supports full-color, but for monochrome systems you only need to install the first of two program disks. An eighteen-page booklet provides complete instructions, and there is a very comprehensive online Help function. The PC version has beautiful VGA graphics, and does not require a mouse or joystick (although the cursor-key interface feels awkward). A cardboard code-wheel provides the "off-disk" copy protection—you have to use it to find and input a specified code before the program will let you start a game.

Stratego only allows for one human playing against the computer. The computer opponent can be preset to five different levels of skill. While there is a demonstration mode, in which the computer will play both sides, there is no provision for two human players. This is a reasonable design compromise—it would be inconvenient to constantly alternate turns, although Spectrum Holobyte has developed a number of games that support play with two copies of the game, on computers linked by cable or modem.

DUCKTALES: THE QUEST FOR GOLD

Published By: Walt Disney Computer Software, Inc.

For: IBM PC and compatibles (requires 512K and EGA/CGA or Tandy 16-color graphics, joystick recommended)

List Price: 44.95 (an Amiga version for $44.95 and Commodore 64 version for $29.95 have been announced)

The Disney name is such marketing magic, that almost anything it is attached to is sure to sell. This can lead to overconfidence when entering a new area, like computer games. Walt Disney Computer Software is an operating unit of Disney Consumer Products, one of three business units of the Walt Disney Company, which includes Walt Disney Studios and Walt Disney Attractions. DuckTales was programmed by an outfit called Incredible Technologies, and seems to have been designed by a committee.

DuckTales is a treasure hunt, starring

continued

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Huey, Dewey, Louie, Scrooge McDuck and other characters. There are some very good graphics and animation effects, as you would expect, but as a game it is disappointing. There are six different games each at three ability levels. The object is to collect the greatest amount of money within a time limit. To play, you've got Scrooge's Money Bin, a very nice World Map, an Airplane to fly, Mountains to climb, Jungles to survive, Caves to explore and rare animals to photograph. Ducktales is too complicated for its intended audience. Or it may just be that the PC version was too ambitious—the design might work better in the more user-friendly environment of the Amiga. The airplane, for example, is virtually unflyable if you don't have a joystick, which is the case for the majority of its potential users.

Good design is simple. The people who designed DuckTales should be required to write that on the board five hundred times.

Documentation for DuckTales is poor—a colorfully illustrated twenty-page booklet that is much too cute to be informative. The actual information you need to play the game is crammed onto a two page leaflet in small print.

The off-disk copy protection scheme uses a secret-letter code printed on a sheet of that irritating brownish-red photocopy-resistant paper (it's almost exactly the color of dried blood). Both 5.25" and 3.5" disks are included in the package.

ALTERED DESTINY

Designed By: Michael Berlyn
Published By: Accolade
For: IBM PC and compatibles (requires 640K and hard drive, 8+ MHz AT and mouse recommended)

OK. I don't want to be a curmudgeon. I don't want to rain on anyone's parade. But this thing is getting out of hand, and somebody has to speak out. These games are getting much too big. Altered Destiny comes on eight 5.25" or four 3.5" disks. It takes eighty to one hundred hours to play. The $12.95 hint book runs to forty-four pages and there's a 900 Hint Line phone number ($0.85 for the first minute, $0.60 each additional minute).

I cannot believe that the creeping gigantism of interactive adventure games is driven by customer demand. I think it must be internally generated by the "can you top this?" mentality of programmers. Bigger is Not Necessarily Better. It's like the dynamics of an arms race. The first modern battleships weighed about 16,000 tons. By the end of the First World War they were up to about 25,000. Between the wars there was an attempt to limit the size by treaty to 35,000 tons. The last generation of these monsters ranged from 45,000 to 68,000 tons. That's what's happening to interactive fiction. Nobody has the time for these things. Nobody has the disk space. It may be true that Tolstoy's War and Peace may be the greatest novel even written, but publishers should note that almost nobody buys it, and ever fewer people actually read it.

These games are getting much too big. Altered Destiny comes on eight 5.25" disks and takes eighty to one hundred hours to play.

For the record, Altered Destiny is about a young businessman who, while spending a quiet evening at home, is sucked through the screen of his TV set into an Alternate Reality. This world is developed in great detail, with a rich variety of creatures and a quest that requires the solution of many puzzles. There is a lot of animation and a stereo soundtrack (even MIDI compatible, for those who have the hardware!).

Stop the madness. Don't publish any more monster-sized games until everyone has a CD-ROM drive, and everything can all fit onto one convenient disk.

PC SOFTWARE REVIEWS

BROOKLYN BRIDGE, V3.0

Manufactured By: Fifth Generation Systems, Inc.
List Price: $139.95
Reviewed By: Birrell Walsh

Software "utility belts" are the software packages that do a half-dozen things we need. My current favorite is Brooklyn Bridge, a file management and transfer program for DOS.

I bought Brooklyn Bridge for file transfer between the desktop and a new laptop computer. Brooklyn Bridge comes with a special connection cable that has four connectors. There is a twenty-five-pin and a nine-pin connector on each end, so you can connect it into any serial port configuration. (This shows that the manufacturer is thinking of

continued

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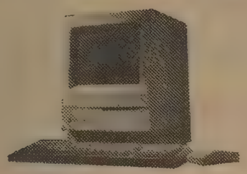

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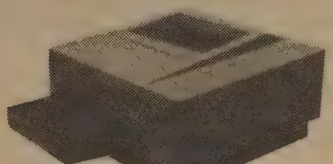

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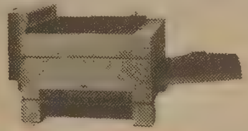

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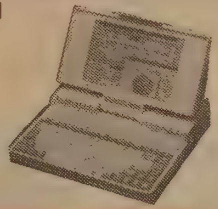

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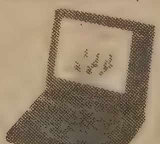

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Another page in printer history.

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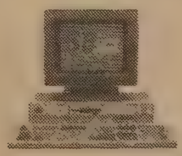

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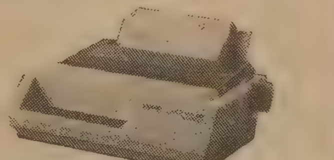

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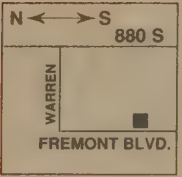

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TOSHIBA 1.44 MB	**69**
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KL 330 30 MB RLL, 40ms	**200**
WD 95044 40 MB IDE/F, 28ms	**275**
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MITSUBISHI 65 MB RLL, 28ms	**290**
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	2MB SIMM (Above Installed on System Board)	6450604	160.00
PS/2 70-E61 & 70-121	1MB SIMM	6450603	85.00
	2MB SIMM	6450604	160.00
PS/2 70-A21	2MB SIMM (Above Installed on System Board)	6450608	170.00
	1MB SIMM	6450603	85.00
	2MB SIMM (Above Installed on Expansion Board) #6450605)	6450604	160.00
PS/2 80-041	1MB MODULE	6450375	169.00
PS/2 8-011 & 80-311	2MB MODULE (Above Installed on System Board)	6450379	475.00
	1MB SIMM	6450603	85.00
	2MB SIMM (Above Installed on Expansion Board) #6450605)	6450604	160.00

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DESKPRO 386/33	2MB MODULE	115144-001	$330.00
DESKPRO 386/20.25	1MB MODULE	113131-001	149.00
	4MB MODULE	113132-001	379.00
DESKPRO 386/20e	1MB BOARD	113644-001	285.00
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	1MB MODULE	113131-001	185.00
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APPLE Model	MEMORY Added	APPLE Part	AMT Price
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MAC IIci	4MB MIT	MO292LL-A	315.00
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PREMIUM WKST 386SX	512K KIT	500510-010	70.00
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PREMIUM 386	1MB KIT	500510-003	165.00
	4MB KIT	500510-004	379.00
PREMIUM 386c	1MB KIT	500510-007	130.00
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1 MGX1-80 NS	5.00
1 MGX1-70 NS	5.25
1 MGX1-60 NS	6.25

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256X1-120 NS	1.99
256X1-100 NS	2.00
256X1-80 NS	2.25
256X1-70 NS	2.35
256X1-60 NS	3.99

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256X4-120 NS	$4.50
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256KX9 80NS	22.00
256KX9 70NS	25.00
256KX9 60NS	30.00
256KX9 80NS S/C	25.00
256KX9 70NS S/C	25.00
256KX9 60NS S/C	30.00
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1MX8 70NS	45.00
1MX9 120NS	45.00
1MX9 100NS	48.00
1MX9 80NS	49.00
1MX9 70NS	52.00
1MX9 60NS	60.00
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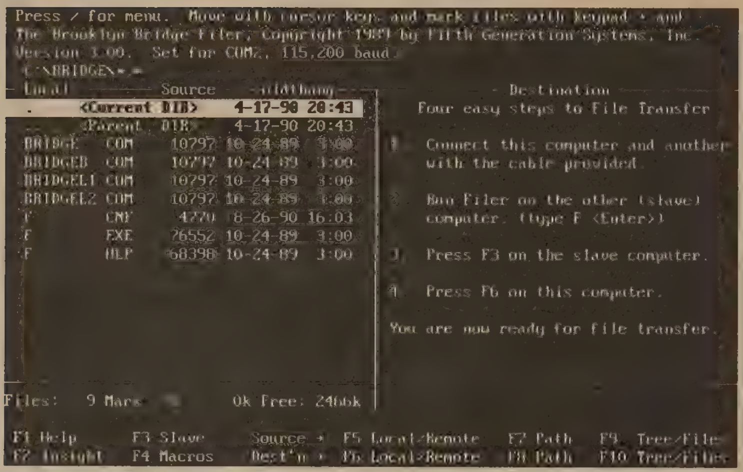
[illegible]% Restocking on Returned Items
90 Days Warranty

VISA

the user.) You can transfer data to another computer through serial ports, parallel ports, or "special" ports of your own naming. Also, you can pass a working copy of Brooklyn Bridge through the provided cable, although not through a parallel cable or many serial cables. You can clone Brooklyn Bridge onto a machine for which you do not have a disk, or onto those unfortunate machines with no floppy drive.



```
Press / for menu.  Move with cursor keys and mark files with keypad + and
The Brooklyn Bridge Filer, Copyright 1989 by Fifth Generation Systems, Inc.
Version 3.00.  Set for COM2, 115,200 baud.
 C:\BRIDGE\*.*
 Local ───────── Source ─ Midthang ──┐               Destination
  .       <Current DIR>    4-17-90 20:43 │  Four easy steps to File Transfer
          <Parent  DIR>    4-17-90 20:43 │
 BRIDGE    COM      10797 10-24-89  3:00 │ 1  Connect this computer and another
 BRIDGEB   COM      10797 10-24-89  3:00 │    with the cable provided.
 BRIDGEL1  COM      10797 10-24-89  3:00 │
 BRIDGEL2  COM      10797 10-24-89  3:00 │ 2  Run Filer on the other (slave)
 F         CNF       4770  8-26-90 16:03 │    computer. (type F <Enter>)
 F         EXE      76552 10-24-89  3:00 │
 F         HLP      68398 10-24-89  3:00 │ 3  Press F3 on the slave computer.
                                         │
                                         │ 4  Press F6 on this computer.
                                         │
                                         │ You are now ready for file transfer.
                                         │
Files:   9 Mark           0k Free: 2466k │

 F1 Help      F3 Slave    Source → F5 Local/Remote   F7 Path   F9  Tree/File
 F2 Insight   F4 Macros   Dest'n → F6 Local/Remote   F8 Path   F10 Tree/File
```

Brooklyn Bridge uses two small windows for the source and destination directories. You can look at either window in conventional listing format or as a graphic tree. Marking files is quick and clear, and there is a wealth of file commands that we all wish DOS had. You can copy or move whole trees of directories at once.

Brooklyn Bridge lets you type messages between the two connected machines. This makes it almost a low-budget network.

We use Brooklyn Bridge as often to manage the files on one machine as to perform transfers between machines. The clear interface and menus, and rich set of commands makes it possible to examine files through the built-in ASCII-file viewer and to gather, rearrange or delete them. The quick setting of file attributes allowed me to build a hidden ASCII file with my name and address for the laptop. This is handy especially if, some day, I need to identify it.

Finally, Brooklyn Bridge has a macro facility. You can record your frequent operations and replay them from a menu.

Brooklyn Bridge has become our DOS shell as well as the household transfer utility. Recommended. (Fifth Generation Systems, Inc. 1-800-873-4384.)

QUICKEN 4.0

Manufactured By: Intuit
List Price: $59.95
Reviewed By: Ed Kahn

In 1983, a couple of guys got together to develop a software program to keep track of a checkbook. In those days, there were lots of these programs and sophisticated people made jokes about the kind of person who would need a computer to balance a checkbook. But there was something different about this program. It would write the checks for you, if you wanted, and then proceed to enter the transaction into a numerical register from which you could prepare all kinds of reports on a daily, weekly, monthly or annual basis. Each transaction was placed into a category that the user created to simplify bookkeeping and tax preparation at the end of the year. It was a snap, for example, to see just how much had been spent on medical expenses or entertainment.

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Quicken became a best-selling financial software package. Now Intuit has just released v4, which is just as wonderful as the older versions but more powerful. Despite the more than four hundred pages of documentation, the program is still simple to use if all you want to do is keep track of your checkbook. But in addition, it will track your credit card purchases, and keep records on all sorts of investments ranging from collectibles to stocks and bonds and mutual funds. The developers of Quicken have brought the same simple straightforward approach to the new version that marked the original release.

The information included in Quicken will allow you to prepare a full financial statement and the data can also be exported into either a Lotus spreadsheet or into a range of tax preparation software.

If you have ever considered computerizing your financial affairs, this is the program to check out. Similar software will all have to be measured against Quicken. This program will save you money and hassle. (Intuit, Inc., 155 Linfield Ave., Menlo Park, CA 94026. 1-800-624-8742)

WINDOWS SOFTWARE REVIEWS

WINSLEUTH

Published By: Dariana Technology Group
List Price: $149
Reviewed By: Woody Liswood

If you liked Checkit or System Sleuth, you'll love WinSleuth. What it does is look around, and tell you what it finds. While not as comprehensive as the other two programs, WinSleuth does run under Windows 3.0, giving you useful information about your system as well as making suggestions about optimizing your Windows configuration.

WinSleuth will tell you about your CPU, whether you have installed a math chip, the BIOS date of your ROM BIOS, the keyboard type, the number of COM ports and their I/O addresses, the number of your LPT ports and their I/O addresses, and how many and what type of hard drives and floppy drives you have installed on your system.

You also get all of the common hard disk information as well as POST or power-on self test results. In addition, WinSleuth gives you information about the device drivers loaded as Windows drivers. Other information about Windows includes the version, what type of mode is active, how many and what are the current applications currently running.

WinSleuth also checks DOS and lets you know what DOS and version, what the mouse driver name is, and how your TSRs are using memory. I, for example, was running DR DOS 5.0. WinSleuth reported that I was using DOS version 3.31, but that the operating system was DR DOS 5.0. So it looks like DR DOS fools around and convinces the computer that it is really 3.31, but still is able to be identified as DR DOS to WinSleuth.

Lastly, WinSleuth will examine your current Windows environment, compare it to the optimum Windows operating environment for your current hardware and make suggestions to optimize your environment.

A utility I would have around. It is not often needed, but if you are running Windows, you may eventually have conflicts between devices. WinSleuth will help you resolve those conflicts. (Dariana Technology Group, Inc., 6945 Hermosa Ct., Buena Park, CA 90620-2698. 714/994-7400)

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List Price: $395

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PRODUCT SPOTLIGHT

Reviewed By: Birrell Walsh

Personal Information Managers must handle two contrary types of information. One is the highly structured time/date/person data of an appointment book. The other is the more subtly structured flow of "personal information"—what the user wants to keep records of. The latter is different from user to user, but each wants their information handled just so. No wonder the PIM business is so frustrating to manufacturers, users, and reviewers.

IBM has released Current v1.1, its Personal

PRODUCT UPDATES

Continued from page 176

receive a free v1.4 upgrade package. Insignia Solutions, Inc., 254 San Geronimo Way, Sunnyvale, CA 94086. (408)522-7600.

➤ **PC Globe, Inc.** has released **PC USA 2.0**, a computer atlas program. The program's database has been updated and now includes population data from the preliminary 1990 US Census. Upgrades will cost $19.95. PC Globe, Inc., 4700 S. McClintock, Tempe, AZ 85282. (602)730-9000.

➤ **PowerUp Software** is shipping **Labels Unlimited 3.0**, which allows IBM PC and compatible users to produce top-quality, customized labels quickly and easily. Users can obtain upgrades by sending their 2.0 master disks and $25 or calling Customer Service. PowerUp Software Corp., 2929 Campus Dr., San Mateo, CA 94403. 1-800-851-2917.

➤ **Silicon Graphics** announced the **4D/35 upgrade** to the **Personal IRIS workstation**. The 4D/35, based on the 35MHz R3000A processor from MIPS Computer Systems, delivers 33 MIPS and 6 MFLOPS. Upgrades for existing 4D/20 and 4D/25 customers are $9000 and $11,000, respectively, depending upon configurations. Silicon Graphics, Inc., 2011 N. Shoreline Blvd., PO Box 7311, Mountain View, CA 94039. (415)960-1980.

➤ **Timeslips Corp.** has redesigned **Timeslips III**. V4.0 includes a new security system, expanded reporting capability, and many other new features. Timeslips Corp., 239 Western Ave., Essex, MA 01929. (508)768-6100.

➤ **T/Maker** and **Reference Software** have bundled WriteNow 2.2 and Grammatic Mac 2.0. The retail price of this special **WriteNow 2.2/Grammatik Mac** bundle is $199, a saving of almost $100 off seperate purchase price. T/Maker Co., 1390 Villa St., Mountain View, CA 94041. (415)962-0195.

➤ **Trius, Inc.** has released **Draft Choice 1.5**, a CAD shareware program. ($50) Trius, Inc., 231 Sutton St., Suite 2D-3, PO Box 249, N. Andover, MA 01845. (508)794-9377.

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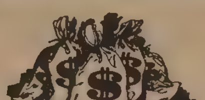

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SOAR V.1.92 (492,493)-Service oriented accounts receivable w/billing. (2 disk set).
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FREEWAY PAYROLL (140,141,142)-Powerful & flexible payroll system w/sales ledger, purchase ledger, invoicing and more. Prints checks! (3 disk set)

HOME

RH-MAN V.3.3 (178)-Desktop utility, notepad, etc. Sidekick clone. Very Good!!
CITY DESK V.7.1. (177)-Full featured desktop publishing system. Very Good!
PC-CHECK (253)-CheckBook & savings account record keeper.
VCR DATABASE (265)-Database for your VCR tapes & movies.
FINANCE (259)-Financial wizard. Calculates loans, amortizations, etc. 20 different calculations.
RECIPES V.1.0 (441)-Over 100 recipes to make you the hit of the party.
LOTTOMAN (275)-Be the next big winner!! Let this program help you pick the winning numbers. You never know what'll happen!!!
EXPRESS CHECK (520)-Easy to use checkbook program. Prints checks too!!
REAL ESTATE ANALYST (255)-Menu driven program for mortgages, interest, amortizations, analysis between renting or owning, plus more.
PC-RECIPE (462)-Computerize your recipe box. Program will recalculate ingredients.
BARTENDER (274)-Be the hit of the party and mix the best drinks!!
CROSSWORD CREATOR V.3.30 (442)-Create crossword puzzles for fun or learning. Great for Crossword fanatics.
SUPERMUSIC JUKEBOX (285)-70 plus songs to turn your PC into a Jukebox.

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PC-FILE + (172,173,174)-Full featured database system with menus, macros, report writer & much more. (3 disk set)
DIRDBMS (167)-Library utility for all your disks.
FILE EXPRESS V.4.01 (170,171)-Menu drive, easy to use database, mail list, report generator, etc. (2 disk set)
WAMPUM V.3.1B (175,176)-Powerful dBase III clone. (2 disk set)
ULTRAMIND V.1.0 (424)-Database generator that will create a customized database for you!
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PLAY 'N LEARN (428)-6 wonderful programs for young children ages 18 months to 4.
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FRENCH 1 (425)-Learn beginning French. Menu driven.
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FUNNELS & BUCKETS (183)-Great learning game for kids!!
ANIMALS (182)-Math for kids.
IQ BUILDER (184)-Test IQ or build one. Great for teaching.
EDUCATE (502)-Disk jammed w/programs to teach kids math, English, Vocab, etc. Requires Basic.
SPANISH (464)-Spanish tutorial w/quizzes, multiple choice, etc.
FRENCH 2 V.1.1 (426)-After the basics, move to the 2nd level of French.
MAP (189)-Learn about the U.S., geography & Capitols. Great Graphics. Requires Basic.
AMY'S FIRST PRIMER (181)-6 delightful programs to teach the alphabet, numbers, shapes, colors, counting, problem solving, & more. Ages 4-8. Requires Basic.

BUSINESS

AS EASY AS V.3.0 (123)-Powerful Lotus clone.
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EXPRESS GRAPH (144)-Business graphing program with different display formats.
PC-CALC + (487,488,489)-Buttonware's very powerful spreadsheet program with graphing, macros, business functions, trig, & more (3 disk set)
BUSINESS PLAN (423)-Complete outline & tutorial for creating a business plan.

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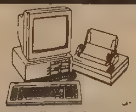

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WPKIDS (348)-A Word Processor for kids!!!
WORDPERFECT 5.0 MACROS (450)-Disk filled with macros. A must!!
PC-STYLE & PC-READ (352)-Writing analysis program. Helps you write more professionally.
POP PERFECT (344)-Menu & mouse system for WordPerfect 4.2.
SPANISH/ENGLISH (453)-Program to translate any file from English to Spanish or vice versa.
WORDPERFECT 5.0 TUTORIAL (485,486)-WordPerfect tutorial learning system. Become an expert at WordPerfect!!
SLIC WORKS V.1.0 (525)-Powerful spreadsheet, database, word processor & communications program. FrameWork Clone.

ADULT

ASTROTIT (110)-Adult arcade game!!
B-WARE (114)-Adult entertainment trivia, poker, etc.
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1 On 2 (354)-XXX Rated. . . Fantastic!!
X-RATED PRINTSHOP (500)-X-Rated pics for PrintShop.
EROTICA (526)-Sizzling, true to life animated show!!
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BAD-BAD (111)-Adult adventure game.
MAXINE (115)-Like none before!!! Sit back and watch!!

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AT UTILITIES (308)-Very useful utilities for your PC/AT.
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AUTOMAXX V.2.2 (309)-Menu system & DOS Manager.
PC-FILE III V.4.0 (319)-Jim Button's file management system. Just about the best!!!
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PRO-MAN (326)-Very good hard disk management program.
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386/25	1095	1195	1645
386/20	995	1095	1545
386SX/16	745	845	1295
286/12	495	595	1045

Options	
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676MB HDD	2395

Basic System Configuration

- 1MB Memory
- Desktop Case
- Real-time Clock
- 230W Power Supply
- Coprocessor Socket
- 1:1 Interleave IDE Cont.
- 1.2MB or 1.44MB Floppy Drive
- 101 Keyboard (Click or non Click)
- 2 Serial / 1 Parallel / 1 Game Port
- Made in U.S.A.

* BYTE LAB First Choice April, 1990 (P130)

Qume CrystalPrint Publisher II

CrystalPrint Publisher II is the ultimate page printer for those who must work in both worlds of printing PostScript language and HP Laserjet.

- * Liquid crystal shutter making engine for exceptional print quality
- * Weitek XL-8200 RISC microprocessor
- * PostScript language compatible
- * HP Series II emulation
- * AppleTalk interface
- * Parallel interface
- * 3MB standard, upgradable 6MB
- * Up to 6 pages per minute

$2495

Qume VGA and Wise Graphic Card

The QM835 is a 14" analog color monitor with resolution up to 1024X768

- * Non-glare etched screen
- * Fine .28mm dot pitch
- * DB-15 analog input

$395

The Wise VGA is Super VGA graphic Card with 1024X768, 256 color (1MB).

- * Compatible with IBM VGA
- * Driver for Window 3.0, Pcad Autocad, Lotus, Symphony Framework, Ventura, etc..
- * Trident Chipset

$195

Sigma Design VGA LEGEND

- High performance 16 bit interface and 16 bit BIOS
- Up to 1024X768, 256 color
- No switch to set on the adapter
- Wide range of drivers
- Pixel Frequency up to 65 MHz
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- Horizontal Sync 31.5 to 49 KHz

Add $50.00 for 1Mb Upgrade

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Number Nine Graphics Xccelerator

- TI 34010, 60MHz graphic processor
- 1024x768N (Max, 1280x1024)
- Built-in MDA, VGA pass-thru
- Support TIGA & NNios s/w
- Multisync or Fixed frequency monitor
- Lowest TI 34010 based board

$695

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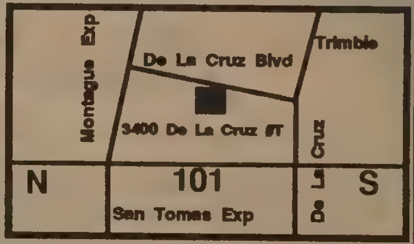
Santa Clara, Ca 95054
Tel(408)727-9986
Fax(408)727-7687
M-F: 9-7PM Sat 10-4PM



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HARDWARE
BUYERS GUIDE

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Graphic Station

The one of the best graphic card. Monochrome to VGA(1024X768), 2 to 16.7 million colors for photographic quality.

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- -Up to 1024X768, 256 colors at interlaced or non interlaced mode
- -2 Years parts and labor warranty

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With Hercules Art Dept., logos, ads and literature or packaging comps can be rendered in hundreds of different styles, colors and layouts.
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Mitchubishi 6605 Multi frequency Monitor and Everex Viewpoint VRAM VGA Card will give you Highest resolution(1280X1024I) for ACAD under $1,500.

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  - -Includes tilt/swivel stand
- Everex Viewpoint VRAM VGA Card
  - -Register & BIOS level compatible w/ IBM VGA
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  - -Supports extended text modes up to 132X44
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  - -1024X768 256 color non-interlaced
  - -Driver for Windows 3.0, Ventura, Lotus etc..

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A/B Color Pen Plotter

SP600 from ENCAD will guaranteed HP 7475A Compatibility. Over 40,000 satisfied users can attest to the reliability of SP600 Pen Plotters. SP600 incorporates both RS-232 and Centronics interfaces to provide flexibility and easy installation.

- -Media: Paper or transparent film
- -Size: 8.5" x 11" or 11" x 17"
- -Pens: 6 HP-compatible fiber tip pens
- -Resolution: .001" Software .004" Mechanical.
- -MAX. Plotting Speed: 14 IPS
- -Warranty: 90 days

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Monitor / Graphic Card

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-HL6905TK, 20", VGA to 1280X1024N	1999
HITACHI	
-CM2085, 20", VGA to 1280X1024N	1949
-HM4319D, 20", VGA to 1280X1024N	1995
-HM4119DDL, 20", 1024X768N	2199
-HM4119DAA, 20", 1280X1024N	2299
NEC	
-NEC 4D, 16" VGA to 1024X768N	1199
-NEC 5D, 20" VGA to 1280X1024N	2295
PHILIPS	
-C1764, 17" VGA to 1280X1024N (Flat)	1499
-C2064, 20" VGA to 1280X1024N	2095
NANAO	
-9070S, 16", 20-50KHz 1024X768N	979
-9400, 20", VGA to 1280X1024	2615

Graphic Card

CONTROL Systems	
-XJ10, 1024X768N or 1024X1024I	1695
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METHEUS	
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-MGE AT/256, 1024X678N, 256 Color	995
Sota Technology	
-340i, 1024X768N, 16 Color	695
RENAISSANCE GRX	
-Rendition II/16, 1024X768N	995
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HERCULES GRAPHIC STATION	
-1024X768, 256 Color	795
HP GRAPHICS CARD	
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With IMAGE-IT from the Sigma Design, you can capture video signal from VCR or video camera and "digitizes" it for storage by your PC.

IMAGE-IT is a low cost, yet powerfull adaptor. Application for IMAGE-IT include Desktop Publishing, Image Databases, Presentation Graphics and Computer Aided Instruction.

$695

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-Model 830 Flatbed Scanner	1995
MITSUBISHI	
-Page Scanner with paper feed	745
-Page Scanner with 16 grey	665
MICROTEK LAB	
-MSF-300G 300 dpi Gray	1495
-MSF-300Z 16 mil Col, 256 Gray	1985
-MSF-400GS 400 dpi Gray	2895

Plotter / Digitizer

Plotter

CALCOMP	
-1023, A-D, 8 Pen	3495
-1025, A-E, 8 Pen	4575
-1044GT, A-E	8895
HOUSTON Inst.	
-DMP61, A-D	2999
-DMP62, A-E	3999
-Option for Multipen	469
IOLINE	
-3500, A-D, 1 Pen	2299
-3700, A-E, Cut & Roll	2999
-4000, A-E, 20 ips	3499

HP Plotter	
-HP7440A, A, 8pens	1095
-HP7475A, A-B,6 pens	1450
-HP7550A, A-B,8 pens	2995
-HP7570A, C-D,8 pens	2995
-HP7575A, A-D,8 pens	3695
-HP7576A, A-E,8 pens	4795
-HP7595B, A-E,8 pens	6695

Come & See Demo for
CALCOMP, IOLINE Plotter

Digitizer

SUMMAGRAPHICS	
-SummaSketch II 12x12	369
-SummaSketch II Pro	639
KURTA	
-12X12, Cur. & Stylus	389
-12X17, Cur. & Stylus	649
CALCOMP	
-12X12, Cur. & Stylus	329
-12X18, Cur. & Stylus	655
-18X24, Cur. & Stylus	1325
-24X36 (2300 Series)	1595
-36X48 (2300 Series)	1795
HP	
-7060A,11X11 S-Pro	485

Information Manager for Windows. They may have found the right mix of structure and freedom: a webwork of items in categories that the user can very easily customize.

Each category in Current is similar to a database, with records and fields. You design the record structure, including text, time and date, numeric or currency, and even imported image fields. You may have default values and calculated values for fields. Your ability to create new kinds of items does not end when you start using a particular category; the design can be altered at any time. Current warns you if you are going to lose data from a proposed alteration.

"Connections" is Current's most interesting feature. You can connect any two items with a relationship you create. A "person" item might have the connection "is employed by" a company item. A nice feature is that when you define a connection, you define the proper phrase for using it both ways. A company "employs" a person, a person "is employed by" a company, and so on.

It's Easy To Share

Now Available In All Parallel Port Configurations

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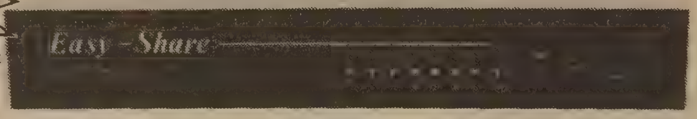

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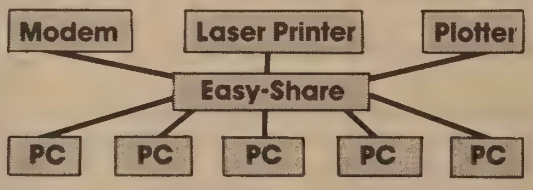
The Peripheral Sharing Solution

Now you can quickly and easily share your printers, plotters and modems with your computers. Easy-Share automatically buffers and routes your data to the desired output device, eliminating cable or diskette swapping and manual switchboxes.

Easy-Share doesn't require any special software to operate. It easily connects to your computer's serial or parallel ports and is compatible with all of your application software.



- Share up to 8 PCs and peripherals with Easy-Share

Easy-Share Gives You:

Easy Configuration
You can configure each port as "input" or "output"–allowing you to connect 7 computers to 1 printer, 6 computers to 2 printers, or any combination of up to 8 ports. And each port can be configured independently for Parity, Wordlength, Baud Rate, Input/Output operation as well as for "handshake" method (DTR/XON).

Easy Operation
Easy-Share automatically transfers data and performs any required switching. There are NO OPERATOR CONTROLS or switches to set. And, any or all "on-line" users can send documents at the same time. Buffer space is automatically allocated to insure maximum efficiency.

Easy Expansion
Easy-Share has 4 serial ports standard, and is expandable up to 8 ports. Plug-in interface cards allow for serial or parallel expansion. Plus, Easy-Share comes standard with 256K of RAM and is expandable to 4 megabyte of internal onboard RAM!

PLUS THESE OTHER FEATURES, FREE!

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Easy-Share supports a special bi-directional mode allowing the use of Modems, Plotters, or even the exchange of files between computers (requires user provided file exchange program).

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Easy-Share supports advanced software commands, including: Number Of Copies, Pause For Paper Change, Printer Select, Bi-Directional Modem Support, No Timeout (for Accounting Audit Trail Use), and others.

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TANSTAAFL
Manufacturing, Inc.
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Current comes with a full set of categories ready for use, but you are not stuck with them. Because you can create and modify both item categories and connections between them, you will quickly begin to customize Current for your own style of working. I put together the "tasks" and "appointment" categories into a new one, "events", that better suited my way of working. I created a bibliography entry which I need as a writer. A businessperson might create inventory items. Customization is quick and easy—and easy to change at any time.

Current allows you to automate the assignment of connections. You can create rules that will make connections for you—assigning all the dirty work to a subordinate, for instance. Connections can depend on other connections to any depth in automation assignment.

The manual could use better indexing, but Current 1.1's tutorial is a model of how this should be done. Give whoever wrote it a raise. The technical support staff is competent and quickly available. The program handles daily scheduling gracefully without being just a datebook. It is a fully customizable and well-integrated machine for designing your own information system. Current would make an excellent standard Personal Information Manager for a Windows-based office. (IBM Product Information, 1-800-426-7699)

MILESTONES, ETC.

Published By: Kidasa Software
List Price: $149
Reviewed By: Woody Liswood

Many of us need GANTT charts for presentations. Milestones does just that, creating GANTT chats running under Windows. It has twenty-eight symbols in five different sizes. It also has fifteen different connector types. There are three levels of headings which can combine yearly, quarterly, monthly, weekly and daily time schedules.

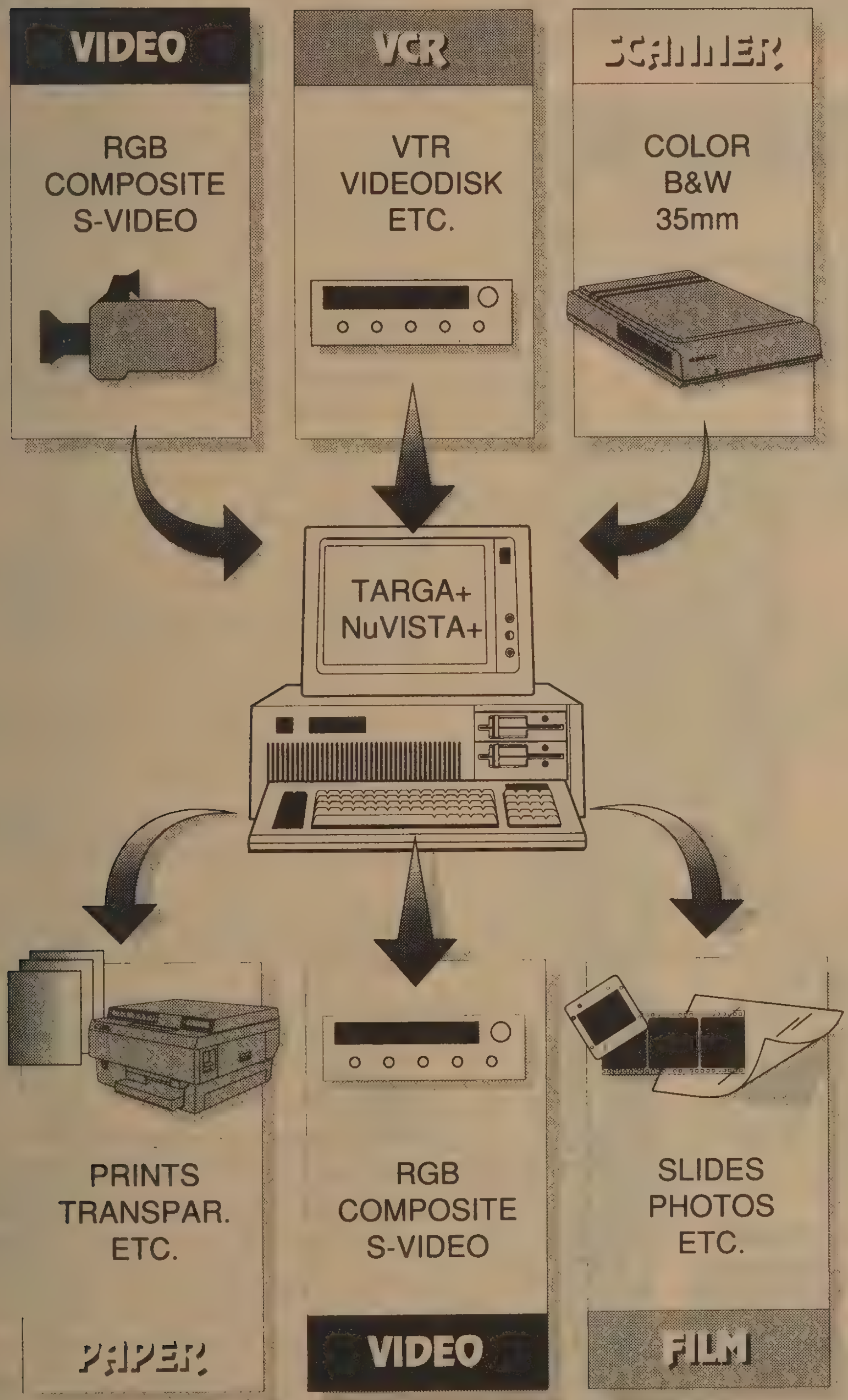
The program is easy to use, although you must know what a GANTT chart is and how it is supposed to appear as well as what you want your chart to look like. Milestones will not teach you project management or GANTT charting techniques, but will help you take those techniques and display them in a quality printed report suitable for presentations. Milestones uses standard Windows conventions, so if you are familiar with Windows, you will know what to do.

The first step to start a chart is to use a Global menu to specify page layout and legend size as well as the number of lines you

Sensational New Products!

TARGA+ *PC*

NuVISTA+ *Mac*



Call for free demonstration

Special Features...

Digital Chroma Keyer: The TARGA+ and NuVISTA+ are the first videographics cards to offer digital chroma keying, a stencil-like process in which all occurances of a defined color are replaced by a live video signal. For example, television weather reports use digital chroma keying to project weather maps behind the meteorologist. This sophisticated performance, even preserves shadows!

Digital Linear Keyers: Linear keying is the process of blending or replacing a specific portion of a video signal with another signal. It is used to insert live or still video, with soft or smooth edges, and to create special effects such as blending, mixing, fading and disssolving between images. Select from 256 levels of transparency between video and graphics!

Image Capture: The TARGA+ and NuVISTA+ offer real time image capture, with software selectable color depth and resolution. From 256 to 16.7 million displayable colors. 512 x 482, 640 x 480, 756 x 486, 1024 x 768. Your choice!

Broadcast Quality Encoder and Decoder: The TARGA+ and NuVISTA+ introduce Truevision's third-generation video encoder/decoder technology on-board. The encoder/decoder allows you to input and output composite video, S-Video (Super VHS, Ed Beta) and RGB in either NTSC or PAL formats.

Advanced Genlock: Genlock enables the TARGA+ and NuVISTA+ to synchronize, or lock to, a broad range of video sources. Design improvements yield a more robust genlock capability which allows you to lock to an even greater spectrum of video equipment, including VCRs (even in still-frame mode), video disk players and still-frame cameras.

Microchannel Version of TARGA+: This new board allows any PS/2 operating under DOS to utilize the TARGA+ capabilities, and access over 300 TARGA software programs!

Windows 3.0 Support: A Windows 3.0 driver will ship with all TARGA+ boards.

XCMD and XOBJ support: NuVista+ ships with Hypercard 2.0 XCMDs and Director 2.0 XOBJs. These externals give you maximum flexibility in creating animations, presentations, and video productions. With these XCMDs and XOBJs, you can control virtually every NuVISTA+ feature!

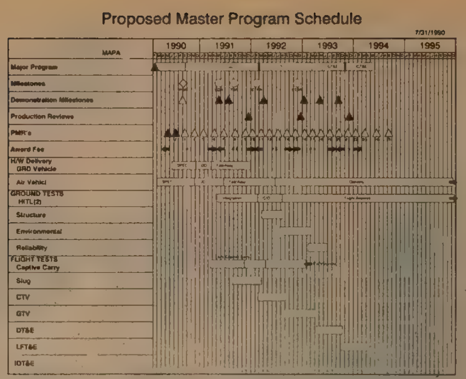
Color Cycling: Both the TARGA+ and the NuVISTA+ have lookup-tables so 8 bit color cycling effects can be used. Excellent for quick real time effects like showing water moving through pipes, lightning on a weather map, or just giving attention to a specific area of your graphic.

VisionArts 1513 N. Main St. Walnut Creek
Computer Graphics Products (415) 943-1600

**ASK ABOUT THE NEW TRUEVISION LOW PRICES* will have on the page. Next, when you add any labels or titles, the program has areas set aside for titles, subtitles, dates, page numbers, and current dates. A feature I liked lets you make symbols date sensitive. Thus, they are empty before that date, and filled afterwards.

Adding a line to the chart is done by a double click. After typing the description you can add symbols. When you choose the symbols, you must also select the start date. You can add text under the symbol, display the date with the symbol, and justify the text to go along with the symbol, and size the symbol as you wish. To add the next segment on this line, select the line description you wrote earlier, then click on the add menu, add a new symbol, then move your cursor while watching a date dialog box change until the date you wish is displayed.

Legends are added the same way. Click on the symbol, select the legend option from the add menu, and complete the blanks.



Milestones, Etc. lets you easily create high-quality charts for presentations.

Editing and changes are just a double click away. Double click on the symbol, and the dialog box appears for you to make any changes necessary.

If you use GANTT charts, Milestones will let you create good-looking charts, quickly, under Windows. (Kidasa Software, Inc., PO Box 1167, Manchaca, TX 78652. 1-800-666-3886)

STRAIGHTLINE

Published By: First Genesis Software
List Price: $99
Reviewed By: Woody Liswood

Now that Windows 3.0 has arrived, programs are beginning to appear that allow you to bypass the GUI environments and their icons and get directly to running your applications as if you were running from a command line. StraightLine, after being configured, allows you to run your applications from a single pull-down menu and bypass both the file manager and the program manager.

StraightLine is run as an ordinary Windows application. In fact, if you like its activities, you will probably load it when you boot Windows so you will never see the program manager, unless you choose to.

When running, you are shown both a directory window and an application window. To find a program, highlight it, click on an install button, and the path and program name are moved into the directory window. Selecting the application, after it is installed, allows you to add documents so that a click on the document name will start the application with the document already active.

In use, it is simple and intuitive. I never needed to look at the documentation and with just a few experiments everything became obvious.

Changing between programs is also simple. Click on the hot key you selected to call up the StraightLine pull-down menu and click on the application.

A simple program to use. Another interesting utility specifically designed to help make Windows run faster and be easier to use by bypassing the Program Manager and File Manager. If that is your goal, StraightLine is for you. (First Genesis Software, Inc., 1000 Shelard Pkwy., Suite 270, Minneapolis, MN 55427. 612/544-4445) ■

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LANDMARK = 43

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LANDMARK = 21

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☐ 2 FD/HD Controller
☐ Serial, Parallel, Game Port
☐ 200W PS w/Case Holds 5 Drives
☐ 101 Enhanced Keyboard

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Mono	339	525	580
VGA	610	795	850
Super VGA	659	855	910

$459 286-16 MHz

LANDMARK = 21

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☐ Socket 80287 & AMI BIOS
☐ 6X16 Bit, 2X8 Bit Slots
☐ Real Time Clock w/Battery Backup
☐ 1.2 MB Floppy Drive
☐ 2 FD/HD Controller
☐ 200W PS w/Case Holds 5 Drives
☐ 101 Enhanced Keyboard

$369 286-12 MHz

LANDMARK = 16

☐ 512K Ram Expandable to 4 MB
☐ Socket 80287 & AMI BIOS
☐ 6X16 Bit, 2X8 Bit Slots
☐ Real Time Clock w/Battery Backup
☐ 1.2 MB Floppy Drive
☐ 2 FD/HD Controller
☐ 200W PS w/Case Holds 5 Drives
☐ 101 Enhanced Keyboard

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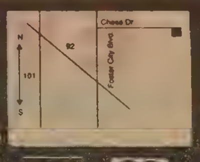

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- Math co-processor socket
- 1 x 32, 6 x 16, 1 x 8 bit slots
- 1.2 MB and 1.44 MB Floppy Drive
- 1=1 Interleave HD/FD Controller
- 80 MB 28 ms Hard Drive
- I/O 2 serial, 1 parallel
- Real time clock w/battery backup
- Standard AT Case w/220 W Power Supply
- 101 Keytronic keyboard
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ECI 386-25 MHz System W/65 MB Hard Disk

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- 1.2 MB or 1.44 MB Floppy Drive
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- 101 keyboard
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Goldstar EGA Monitor 640 x 350	285
Goldstar VGA Monitor 700 x480 0.39	305
Goldstar Monitor 720 x 4000 0.31	350
Panasonic C1381 1024 x 768	395

ECI 286-12/16 MHz w/40 MB Hard Disk 28ms

$625/$689

- Baby size main board running at 6/12 or 8/12 0/1 Wait State
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- 80287 Math Co-processor Socket
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- MINI Vertical Case w/200 W Power Supply
- 101 keyboard
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MFM 1:1 HD/FD Cont	69
IDE Dual HD/FD Cont	35
SCSI 1:1 HD/FD Cont	275
ESDI 1:1 HD/FD Cont Ultrastore w/32K	190
RLL 1:1 HD/FD Cont	98
Ahead VGAS 1024 x768 256K/512K	95/125
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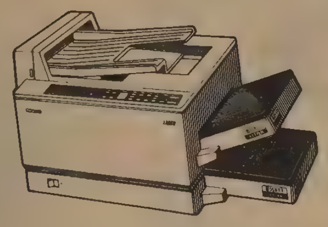

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Panasonic Office Automation OA

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- One year limited warranty

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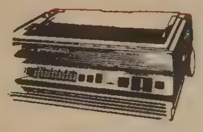
Panasonic Office Automation OA



KXP 1124 •192 CPS, 80 COL, 24-PIN	$275
KXP 1180 •192 CPS, 80 COL, 9-PIN	149
KXP 1191 •240 CPS, 80 COL, 9-PIN	219
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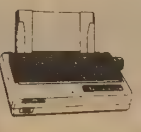

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OKIDATA

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ML380 180 cps	259
ML390 Plus	459

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ASB422-256K $249

- 4 computers share 2 printers • Auto scan or key switch with 256K buffer
- Transfer rates 1K a byte/sec/port • LED display, which shows quantity of copies, can be easily set by + or - button

ASB624-256K/512K 359/399

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This auto scan switch allows multiple computers to share one printer without the need for manual switching.

• MP401 4 computers share one printer (DB25 parallel)	$108
• MP801 Same as MP401, except using 8 ports	135
• MS401 4 computers share one serial peripheral	114
• MS801 Same as MS401, except using 8 ports	139

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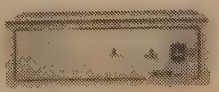
SAFE POWER SYSTEMS



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- Two year warranty • Built-in surge suppression

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- Overload & short-circuit protection
- Batteries always on charge

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- 10-30 minute backup
- Visual/audible indicators
- Overvoltage protection
- Batteries always on charge
- DB9 UPS monitoring port

$359/395

500/500A

- Sine wave output
- 1-2ms transfer/9-25 minute backup
- Overvoltage protection
- Overload & short-circuit protection
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- DB9 UPS monitoring port

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- 120MB capacity
- Fastspeed
- IBM PS/2,PC.AT XT, compatible

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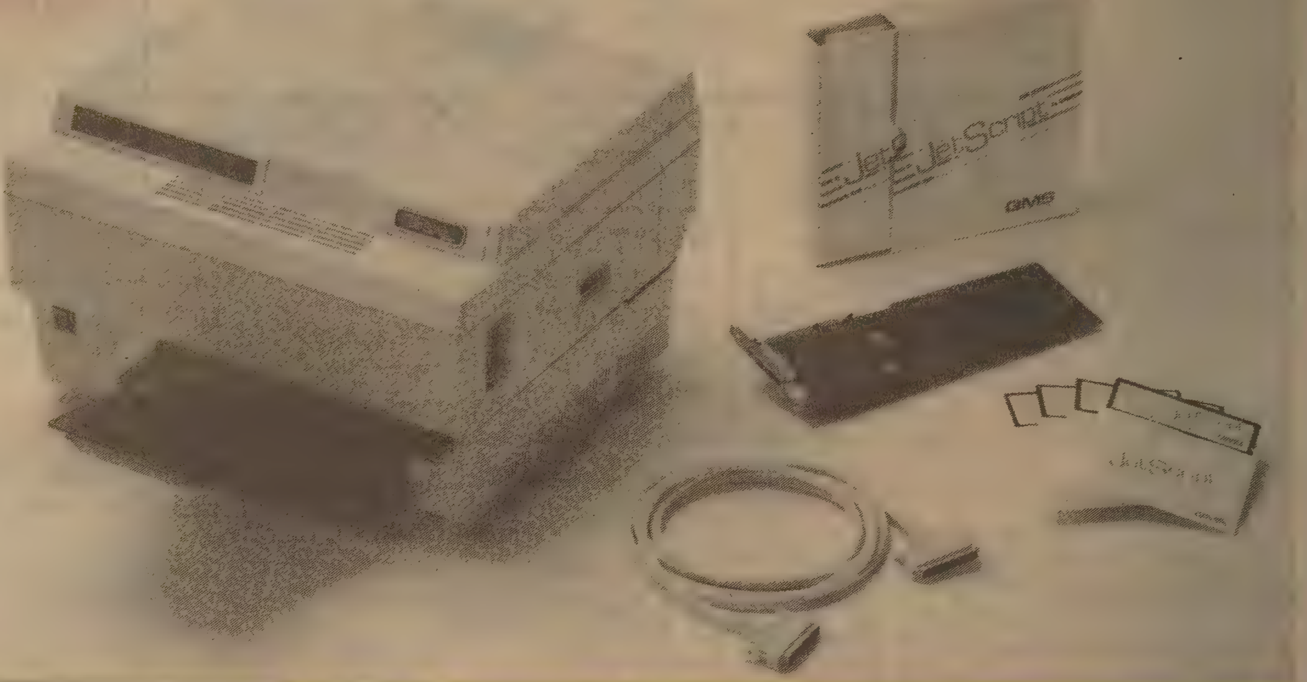
NEW OFFER

PostScript® Laser Printer

only $995*



* For just $995. you get a new QMS JetScript Controller, all necessary cables and software plus a refurbished Canon LBP-CX printer and a remanufactured toner cartridge.

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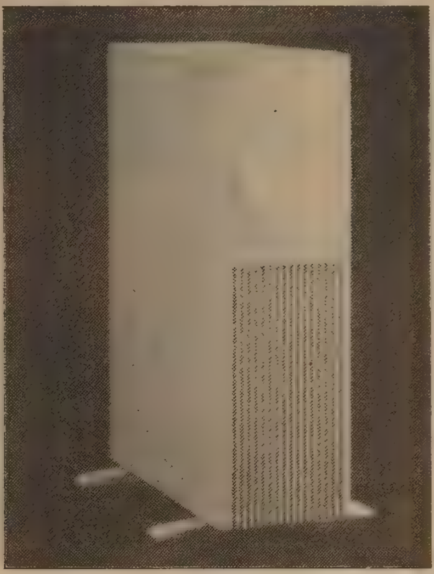

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NEC: 150-Mb/18-Ms/ESDI	799
CONNER: 80-Mb/18-Ms	519
WD: 40-Mb:1:1-HD/FD Controller	299
WD: 80-Mb/18 ms Controller	499
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SUPER VGA Monitor
(1024 x 768) .28mm DP
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SUPER VGA CARD

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Macintosh: The Burglar's Choice

New Macs, The Ad That Never Was, Trade Show Follies, And Other News

BY DAVID MORGENSTERN

BMUG

What a Mac mood I'm in, take the hard disk for a spin—it's almost like being in love…

Love may be a little strong for the new brews of Macintosh Light, but they will give the stock a boost. If only I'd bought some. I keep "investing in myself," which is a buzz-phrase for major league digital debt. Charge!

ANOTHER ROLLOUT, AND THE AD APPLE LEGAL DIDN'T LIKE

The introduction of the new Macintosh models, broadcast from the Fremont manufacturing plant, had its moments. All in all it came off very well—live video being so tricky.

Even more perilous to the event was the sight of BMUG's hacker-in-residence, Harvey, wandering around with a name tag describing him as a Rocket Scientist! One click of the mouse button and he can drop a bomb. Apple seems to have survived the close encounter.

The big cheeses handled themselves competently. Sculley seemed to have a little trouble with his cue cards at the beginning, but warmed up as the show ground on. Spindler, the German Chief Operations Officer, must have been working weekly with a diction coach. His pronunciation was vastly improved over his last outing, the introduction of the Mac IIfx.

The big surprise was a cameo appearance of Apple co-founder Steve Wozniak as a golf-cart driver for a IIsi Product Manager. Steve was lucky not to have been pulled over by the Highway Patrol when driving off stage. Someone, obviously not knowing their mike was still live, screamed at him to slow down!

One of the best moments came with a demo of the Mac LC. Two actors, Breanna Knecht, a young girl, and Tom McGraw, a grownup, debated whether the LC is a business or educational computer. The gag line was supposed to be, "It's simple enough for an adult to learn." As Tom showed how sound files can be attached to a spreadsheet, he got an error message—*Serious Memory Error has occurred. Full Impact is unable to continue [404].* Tom said, "OK," while the kid giggled. The audience howled. Tom ad-libbed, "You were wrong, it's not simple enough for an adult to use." He tried again and the thing worked. Sweat City!

Contrary to certain press reports, "si" does not stand for "simply irresistible." Rather, it means "slim integrated" for the slim design, and integrated video circuitry.

Apple brought the new models to the BMUG meeting a few days after the introduction. Although Apple doesn't *love* BMUG, they know enough to bring along a steak, or a stuffed toy to feed the lions in the peanut gallery. This time they brought videos.

They screened the entire American ad campaign for the new Macintosh models. They are putting $40 million into playing them up worldwide. The spots weren't really new to the crowd, since we received a sneak preview the week before the introduction—the BMUG meeting is the cutting edge of Macintosh rumors and realities. What *was* new was an ad that will never see the light of a cathode ray tube!

Apple's ad-that-never-was starts with a couple of thieves in a college computer lab. On one side of the lab are Classic Macs, and on the other, PC-type computers. The senior thief tells the journeyman, who's starting to take the larger PCs, "Hey, no. Only these," pointing to the Macs.

The ad-that-never-was starts with a couple of thieves in a college computer lab on a security camera. On one side of the lab are Classic Macs, and on the other PC-type computers. The senior thief tells the journeyman, who's starting to take the larger PCs, "Hey, no. Only these," pointing to the Macs. The junior thief gives the boss some lip, telling him that all computers are the same. He's scolded with, "What are you, Phi Beta Kappa?"

The camera pulls back and we see two uniformed securitymen watching the tape, as the Macs go out the door. One asks, "Why did they take only one kind of computer? That must be the most expensive!" The "smart one" answers, "That's what's so strange—they left the expensive computers."

The announcer pipes in with, "There's only one disadvantage to a computer that people actually use. Everybody wants one." The ad ends with the security guy saying, "What am I missing?"

Apple legal thought that the thieves were Hispanic-looking, although that was not obvious to me. The burglary section was in grainy

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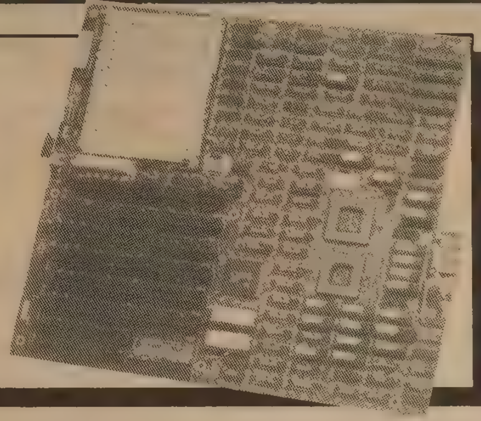
- SOCKET FOR 80387 OR WEITEK 3167
- INTEL 386-33 CPU
- TTL CACHE CONTROLLER
- 64K CACHE SRAM
- DRAM: 256K, 1 MB, 4 MB (HYBRID)
- 6 16-BIT, 1 8-BIT SLOT
- STANDARD AT SIZE



IW-H103 (AT CASE)

- AT, BABY AT MAIN BOARD
- 5 X 5.25" HALF HEIGHT
- 16.73" X 21.02" X 6.18"
- AT "L" TYPE POWER SUPPLY
- 8 SLOT PORTS
- SLIDE IN TYPE
- 1 PC/CARTON/25.0 LBS.
- MEET FCC REQUIREMENT

IW-A107 (AT CASE)

- AT, BABY AT MAIN BOARD
- 5 X 5.25" HALF HEIGHT
- 16.73" X 21.5" X 6.26"
- AT POWER SUPPLY
- 8 SLOT PORTS
- SLIDE IN TYPE
- 1 PC/CARTON/26.0 LBS.
- MEET FCC REQUIREMENT

IW-D13 (BABY AT CASE)

- XT, BABY AT MAIN BOARD
- 5 X 5.25" HALF HEIGHT
- 16.73" X 19.72" X 6.18"
- XT POWER SUPPLY
- 8 SLOT PORTS
- SLIDE IN TYPE
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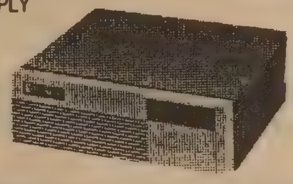
- MEET FCC REQUIREMENT



IW-B103 (BABY AT CASE)

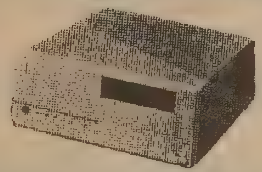
- XT, BABY AT MAIN BOARD
- 3 X 5.25" FDD,
  1 X 3.5" FDD,
  1 X 3.5" HDD
- 16.75" X 16.73" X 6.18"
- PS/2 POWER SUPPLY
- 8 SLOT PORTS
- SLIDE IN TYPE
- 1 PC/CARTON/20.0 LBS
- MEET FCC REQUIREMENT

IW-B570 (BABY AT CASE)

- BABY AT MAIN BOARD
- 3 X 3.5" FDD, 1 X 3.5" FDD,
  1 X 3.5" HDD
- 16.73" X 17.4" X 6.26"
- BABY AT POWER SUPPLY
- 8 SLOT PORTS
- SLIDE IN TYPE
- 1 PC/CARTON/22.0 LBS.
- MEET FCC REQUIREMENT

IW-BA77 (BABY AT CASE)

- AT, BABY AT MAIN BOARD
- 3 X 5.25" FDD,
  1 X 3.5 FDD
  1 X 3.5" HDD
- 16.53" X 14.26" X 6.68"
- PS/2 POWER SUPPLY
- 8 SLOT PORTS
- SLIDE IN TYPE
- 1 PC/CARTON/20.0 LBS
- MEET FCC REQUIREMENT



IW-K101 (TERMINAL CASE)

- XT, BABY AT MAIN BOARD
- 1 X 3.5" FDD, OR
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- 15" X 15.35" X 2.8"
- 70W SPECIAL DIMENSION POWER SUPPLY
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IW-E13 (SLIM CASE)

- XT, BABY AT MAIN BOARD
- 1 X 5.25" FDD,
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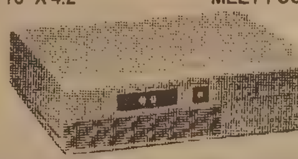
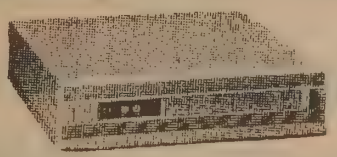
  1 X 3.5" HDD
- 16.5" X 16" X 4.2"
- PS/2 POWER SUPPLY
- 5 SLOT PORTS
- SLIDE IN TYPE
- 1 PC/CARTON/16.0 LBS
- MEET FCC REQUIREMENT



IW-F13 (SLIM CASE)

- XT, BABY AT MAIN BOARD
- 2 X 3.5" FDD, 1 X 3.5" HDD
- 16.5" X 16" X 4.2"
- PS/2 POWER SUPPLY
- 5 SLOT PORTS
- SLIDE IN TYPE
- 1 PC/CARTON/16.0 LBS
- MEET FCC REQUIREMENT



IW-G13 (MINI TOWER CASE)

- XT, BABY AT MAIN BOARD
- 3 X 5.25" FDD,
  1 X 3.5" FDD,
  1 X 3.5" HDD
- 7" X 16.3" X 15.4"
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- 8 SLOT PORTS
- SLIDE IN TYPE
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IW-Q103 (MIDI TOWER)

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  1 X 3.5" FDD
- 8.46" X 16.73" X 21.26"
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- 8 SLOT PORTS
- SLIDE IN TYPE
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IW-T398 (BIG TOWER CASE)

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47448 Fremont Blvd., Fremont, CA 94538 • Tel: (415) 657-5868/9 • FAX: (415) 657-7661 black and white, and the accents sounded stock East-Coast to my California ears. Perhaps they didn't want to give campus outlaws any tips, but Macs have been the preferred product for campus heists for years.

OH SAY CAN YOU SEYBOLD

BMUG had booths in what seemed an endless stream of shows in October. The two biggest seem to be heading towards each other with the speed of oncoming snails—the Seybold Computer Publishing Exposition, and the American Exposition's MultiMedia Expo.

The Seybold show is the three-ring circus for desktop publishers and computer graphics professionals. The big players all had big booths—NeXT, Apple, IBM, DEC, and Sun were dueling to out-demo each other. Bit-stream had a magician doing "public service announcements." Prepress-tidigitation.

> **Everyone is waiting to get the cost of compression down, and the speed up, so that the huge color files now being handled on desktop computers can be stored and transmitted conveniently. Color animation and video can fill up a disk faster than you can say "GnuBus."**

Seybold was held at the San Jose Convention Facilities Complex. There were exhibits in several halls, one of which required attendees to walk outside, cross the street, dodge light-rail vehicles and cars, and follow a trail of dropped press releases through a maze-like building and restaurant. Of course that's where they stuck BMUG. Many vendors were not too happy with the light attendance, or with the high prices they were putting out for their exhibits.

The show was dominated by expensive output devices, color printers, pre-press machines, and graphic accelerators. But recently, they expanded the definition of "publishing" to include multimedia and electronic publishing, including presentation software, CD-ROM, and authoring systems. If you can't byte 'em, join 'em.

The main topic of discussion was compression. Everyone is waiting to get the cost down, and the speed up, so that the huge color files now being handled on desktop computers can be stored and transmitted conveniently. Compression is also on the minds of multimedia heads. Color animation and video can fill up a disk faster than you can say "GnuBus."

A couple of things stood out :

- The Wacom pressure sensitive tablets are wonderful. The SD-510 tablet doesn't hog the desktop, and comes with a super lightweight stylus. It's easy to create smooth-flowing tapered lines and effects with these pens. Most color painting programs are now taking advantage of this technology, including PhotoShop.
- PowerScript by Colossal has already made its way into some local copy stores. It's a 400 dpi color imaging system that creates huge copies. PowerScript accepts encapsulated PostScript (EPS) files on Macintosh, or PC 3.5 floppies (the system uses a dedicated PC), and then "rasterizes" them out to a number of color devices. Their booth featured a plotter that printed sheets 42" wide by 12' in length. It's a do-it-yourself billboard kit when combined with a color graphics program.

There was also a "special event" at SeyboldLand, called Gutenberg's Garage. This was a fancy showbiz way of saying hands-on demonstrations. Men and women dressed in pseudo-16th Century European clothes and speaking in fake accents pushed handbills on innocent attendees for the happening. I ducked for cover when I spied an international incident brewing. A team of Japanese businessmen were sent into the Renaissance Zone by an insistent and buxom self-described "wench." Sushi, m'Lord?

WHAT IS BMUG?

BMUG is an educational non-profit consumer advocacy group organized to share information, and provide critical direction to users and developers in the computer community worldwide.

Like any growing organization, it is many different things to its ten thousand international members. BMUG supports many Special Interest Groups (SIGs), an eight-line Bulletin Board System (BBS), a free HelpLine, software library, weekly meetings, publications, and much more. BMUG also puts out a semi-annual 400+ page book that we call our "newsletter."

Our motto continues to be: *We're in the business of giving away information.*

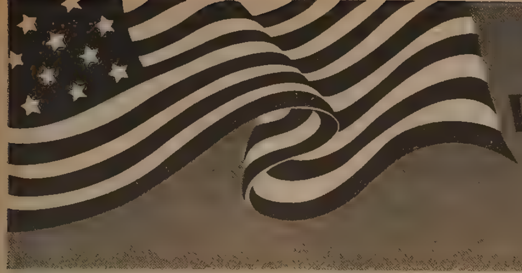
Come and join in the dialogue at the BMUG main meeting every Thursday evening, 6-9 (or whenever we finish), in the Physical Sciences Lecture Hall on the UC. campus. BMUG West is a meeting held monthly in the Exploratorium, San Francisco's science museum.

The BMUG HelpLine, (415)849-HELP, and our fax number, (415)849-9026, provide technical assistance and telephonic hand-holding during business hours (11 am- 5 pm). If your question can't be answered on the spot, we try to get you in touch with someone that can help. Of course, not every problem can have a happy ending—but we try.

BMUG has one of the most up-to-date, comprehensive software libraries around with 500+ double-sided disks filled with the latest versions of public domain or shareware programs and HyperCard stacks. New disks are unveiled almost every week at the Thursday general meeting. BMUG also brings you the *PD ROM™ Version II,* our library and more on CD-ROM.

Our BBS offers many of the latest versions of files in our software library as well as news, private mail, rumors, etc. The BMUG BBS is part of the worldwide EchoMac Network on FIDOnet (161/444); by calling a local FIDOnet BBS in your area, you would then be able to get in touch with us wherever you are as well as send mail to users everywhere! BMUG is now a part of the international USENET network (apple!bmug!user.name@sun.com) or (user.name@-BMUG.FIDONET.ORG). With our multi-line capability you are now able to have access to BMUG almost 24 hours a day. It's easy to use, fun, and a great resource.

To get some further information about BMUG, please write to: BMUG, 1442A Walnut St. #62, Berkeley, CA 94709. If you prefer to phone our business office, call (415)549-BMUG, or Fax (415)849-9026.



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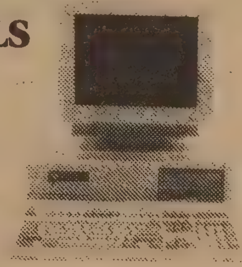

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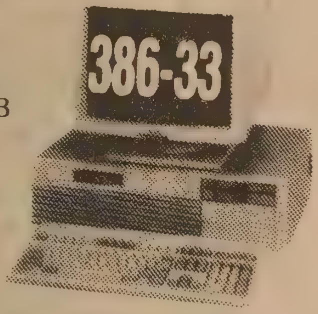

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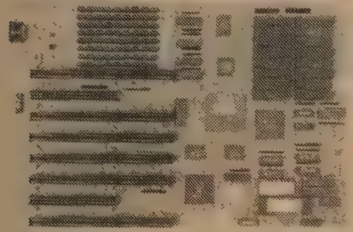

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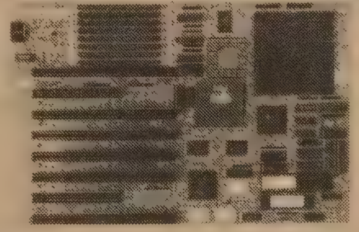

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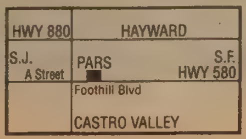

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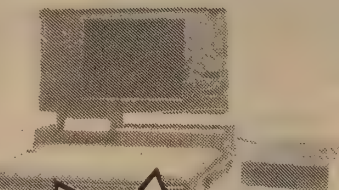

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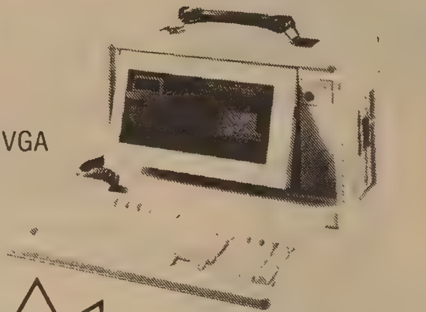

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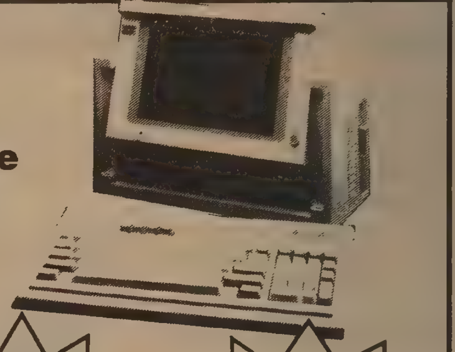

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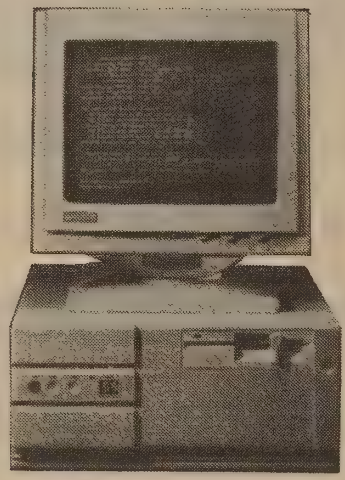

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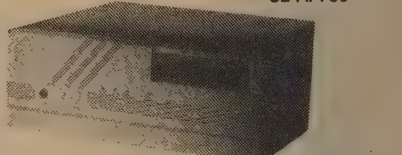

SE-AT-789

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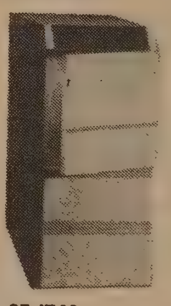

BIG TOWER

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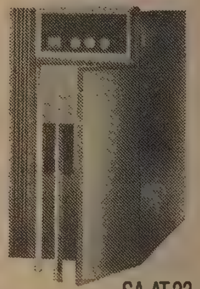

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YOU AND MEDIA

The Multimedia Expo is a small show, with about fifty exhibitors. It started out a few years ago as a hypermedia-only show, but now is dominated by desktop video graphics. There were visits to the BMUG booth by HyperCard development team members, HyperCard programmers, and video heads.

Amanda Goodenough and Karen Rall, authors of *Kids Can Save the Earth*, came by with Karen's 10-year-old son, Eric, a young hacker in training. Steve Costa, BMUG's Acting Director, interrupted advice-giving to greet him."Who is this kid?" sniffed a snubbed groupie.

Later, Eric was chased away from another booth. He had grown bored with a science game on evolution, and decided to check out the programming. He knew all the commands to open up the Director scripts, freaking out the non-technical helpers running the demo. Steve was not amused, saying, "He knows better." Eric wouldn't want to offend future employers, right? They might be cutting him a check in a couple of years.

Here are a few of the multi-goodies that we saw:

• The Vent Video Master, from the latest company by Atari founder Nolan Bushnell, was very impressive. It's a box that allows the Mac to control off-the-shelf consumer video equipment. The Master comes with little wand-like infrared devices that replace the built-in controller on your VCR, or any other infrared controlled product.

It's great for low cost video editing. While watching an external monitor (or your Mac screen if you wanted to buy a really fancy display card), you can describe cuts and edit with your mouse. The box comes with software that helps users with video editing, or presentations, as well as XCMDs to use in HyperCard. Vent is also selling an NTSC out card that lets you show your Mac screen on ordinary televisions, VCRs, or video projectors. The price tag was only $600 list for each.

• Similar to the low-cost Vent, but for the video professional, were the products from Diaquest Inc. The DQ-Animaq board allows single frame editing, rotoscoping (which is the combining of fancy image processing and video images), and the random access of video images. This stuff can only be done with professional video equipment. Some of these techniques take hours to accomplish, but it's great to wake up in the morning with a cup of tea and a hot rotoscope.

• The SpectrumFM board by Mosaic Development Company is a full featured FM tuner controlled through a desk accessory. The TunerDA has twenty presets, and has a calendar that will control a cassette deck for auto-recording. The card doesn't use your Mac speaker, so it won't bother your fancy beep sounds. The board retails for around $300.

Mosaic is pushing the use of radio for digital information. The technology exists now to put computer data in the spaces between radio stations. Users would pick up a stream of data off the airwaves directly into their computers. The data could be anything—from stocks, press releases, to digital audio recordings of that garage band next door.

•Several BMUGers had to be dragged away from the Mandala System by Virtual Realities. The system combines live television and computer graphics. You stand in front of a color monitor, and see yourself mirrored on TV. Images and animations flow around you, while you control events with your body without physically touching anything! If a ball floats in front of you, you "hit" it with your hand, and it moves, or causes some other action. At the show, the image was projected on a large screen, so that everyone could share the experience.

Virtual Realities is looking at licensing this technology for interactive billboards, science exhibits, and of course, games. Very cool stuff, but it came with a very heavy price tag. If you have to ask...

The Seybold people grudgingly opened their show and newsletters to virtual publishing. They were in danger of being left behind, stuck

> **At Seybold, men and women dressed in pseudo-16th Century European clothes and speaking in fake accents pushed handbills for Gutenberg's Garage on innocent attendees. I ducked for cover when I spied an international incident brewing. A team of Japanese businessmen were sent into the Renaissance Zone by an insistent and buxom self-described "wench." Sushi, m'Lord?**

BMUG CALENDAR

December 6	Group Technologies *Aspects*, Ventura Software *Ventura Publisher*
December 13	No meeting. Finals time
De cember 19	BMUG West meeting in San Francisco. Exploratorium Museum. Quark *XPRESS*, SuperMac (new multimedia product)
December 20	No meeting
December 27	No meeting
January 3	ParaComp *Film Maker*, Mapinfo *Mapinfo*
January 10	Virtus *Virtus Walk Through (CAD)*, Aldus *FreeHand*
January 24	Wacom *SuperDigitizer*, Time Arts *Oasis*

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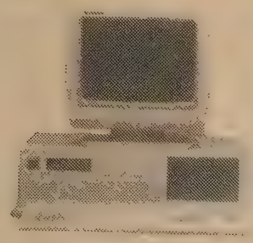

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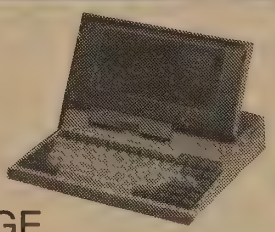

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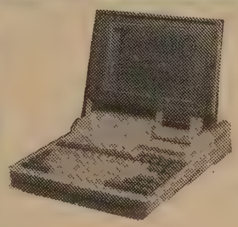

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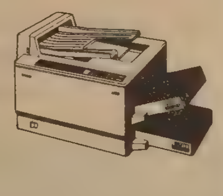

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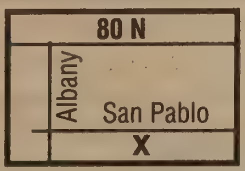

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in ink and paper, by ignoring the new technology. Just as CDs have taken over the audio market, so software published work will overwhelm sections of the print market. Wouldn't you know that I just had to make a hardcopy of a document at the MultiMedia show, and couldn't find a printer anywhere. My kingdom for a rasterizer!

SHAREWARE SPOTLIGHT

The holidays are coming up, and BMUG is the perfect mall for your special Mac user. Here are a few drive stuffing specials that will keep everybody busy:

- Columns is a shareware game that bears a superficial resemblance to Tetris. It's very addictive. Games 67 disk.
- Stained Glass is a beautiful game in color for color Mac owners. You remove colored panes by jumping. Paris 26 disk.
- The Grouch Init gets Oscar out of your trash can to sing *I Love Trash.* It's neat. Sounds 23 disk.
- Fruits of Passion CDEV changes the Apple menu to other delicious fruits. Utilities 33 disk.
- ResEdit 2.0B2 is the latest version of this essential tool for customizing your Mac. It includes a color icon editor that will keep you busy for days. Utilities 16 disk.
- HyperCard 2.0 can only be sold by BMUG until December 31st. The Train stack is worth the entire price, but you get the whole five disk set. $15 plus $3 handling.
- BMUG tie-dyed T-shirt. Reads BMUG on the front, and "Tie-dyed in Berkeley by Deadheads" on the back. $15.
- A BMUG membership—an awesome gift. $40 for a year's worth. ■

SILICON TRICKSTERS TAKE ON XANADU

The silicon tricksters that worked the Rosebud Technology hoax at last April's Macworld Expo in San Francisco have struck again. Rosebud was a complex series of T-shirts, press releases, and announcements for a nonexistent group of products.

The latest addition to these jokesters' repertoire is a take-off press release, or *broadside,* on Ted Nelson's Xanadu Project. Nelson is the "father" of hypertext, and he's been pushing his vision of data reality for years. His concept is *the best,* of course, and other implementations (e.g., ones that really exist) of hypermedia are brushed off. Don't even mention the word *HyperCard.* Enjoy!

TOMORROW'S PARADIGM: A SEAMLESS AND REUNITED COMPUTER WORLD. ONE WORLD! ALMOST READY TO SHIP!

The long-awaited Xanthoma™ stowage program, under development even as you read this, at the Xanthoma Company, Ltd., a subsidiary of A Real Big Corporation, Inc., may have insanely dramatic consequences throughout the universe as we know it and will set a record for using run-on sentences inside of crowded press releases that look suspiciously like New Age advertisements.

A New Universe—No Kidding! This new way of using your computer, *which we cannot really even describe,* will permit anyone to access any data, anywhere, made at any time since Creation (we have it in good with the Big Kahuna), all shared thru links forged of iron. *All Data! Yes!*

Applications. Read our lips, dude: *You might make some money or get famous or even something better, maybe,* but only if you use our stuff. We take care of all of the problems, leaving you with fame, fortune, and fending off up to thousands of attractive admirers. *Your only worries! How 'Bout That?*

User Interfaces. Yeah, OK, you still have to write the applications. But it's only the simple stuff, like linking and occlusion and stuff, so you won't have to work real hard or anything. We'll probably even be able to point you in the right direction code-wise. *No Nasty Toolbox Learning Curve!*

> **A New Universe—No Kidding! This new way of using your computer, which we cannot really even describe, will permit anyone to access any data, anywhere, made at any time since Creation (we have it in good with the Big Kahuna), all shared thru links forged of iron. All Data! Yes!**

Groupware. Pretty hot topic, huh? Once you buy into our *weltanshaung* [world view], you can throw around words like "Rotostowage," "Groupware," and "Paradigm!" *MacWeek* columnists will grovel at your feet, begging for interviews. You won't even need a product, Just a Good Broadsheet!

Open HyperText Publishing means that we hope a lot of people are going to put out stuff that will be interconnected to other stuff, in all forms of data, including text, graphics, 3-D lab data, clips from old movies, demo tapes from garage bands that never made it to the Big Time, digitized family vacation photo albums, and all other conceivable forms of information; all automatically cross-indexed in microseconds with no red tape or psychoactive drugs.

Paradigm Warp. This is a new way of thinking about everything. It is wrenching to the mind. That's why this broadsheet doesn't really even tell you what it is. Dramamine™should be included with every package. I'm getting sick now, just reflecting on even considering the possibility of pondering it.

THE SCHEDULE

Real Soon: *We're just about ready to tell you what we're going to do!* Full details of everything, with graphic color photos (must be over 18), new FEEBLE protocol, and certain new concepts that we don't quite have a grip on ourselves.

Sooner than You Think: Something will be released that shows we're serious about all this.

Just a Little Bit Later: Everyone on the planet will own a copy and want to buy your stuff!

While You're Still Young Enough To Enjoy It: Early developers could make Big Bucks with Xanthoma™Rotostowage™applications. Think about it! Could be worth your while.

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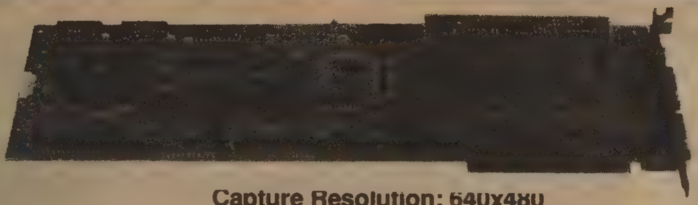

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Featuring Multiple Sequential Frame Storage.

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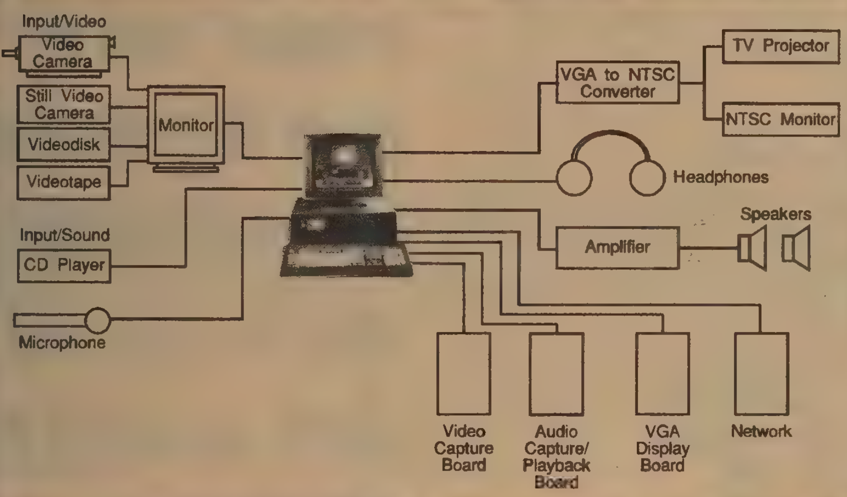
Acquisition Time:	1/60 second for NTSC field mode 1/30 second for NTSC frame mode
File Format Output:	GIF, TIFF, PCX, CUT, IMG, TGA, and FLI *
Colors:	65,536 Acquired (16 bits/pixel) 256 colors from a palette of 65,536 or 64 gray scale levels displayed
Output Display:	Analog RGB Video output for viewing live images during capture process. Digitized images can be displayed on standard VGA, super VGA or IBM 8514 system without the Super VGA adapter.
Form Factor:	Single-slot PC/XT/AT and MCA bus

* PAL Version Optional.

MULTI MEDIA SYSTEMS



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- GLORIA Sound Board
- VIN Board VGA to TV Conversion
- VGA Sub-System
- Autodesk Animator
- MS-DOS

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AVL 2000

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- 1 Mb RAM
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VIA REAL TIME COLOR CAPTURE BOARD

Resolution	**320x240 pixels**
Colors	65,536 Acquired 256 from a palette of 65,536 displayed
Output Display	VGA monitor, Multi-Sync, Analog RGB monitor
File Output	GIF, TIFF, PCX, IMG, or Jovan proprietary VI format
Form Factor	Single slot AT/MCA bus

$375

SYLVIA STILL IMAGE COLOR CAPTURE BOARD

Spatial Resolution	**640x480/320x240**
Depth Resolution	8 bits (256 grey levels, 16.7 million colors)
Input Compatible	(NTSC or PAL 0ptional) video or Monochrome (EIA 60 Hz or CCIR 50 Hz) 1 V p-p (RCA jack)
Form Factor	Single slot AT/MCA bus

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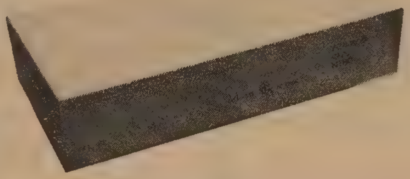
CECI Color Encoder included with SYLVIA for color image capture

CONVERT COMPUTER IMAGES TO TV VIDEO



VIN VGA to NTSC Conversion

Input	Analog RGB from VGA Adapter card or analog RGB at video frequency
Output	Loop through analog RGB for VGA monitor. Analog RGB at video frequency. Composite NTSC of S-VHS signal.

* PAL Version Optional

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AUTODESK ANIMATOR SOFTWARE

AUTODESK

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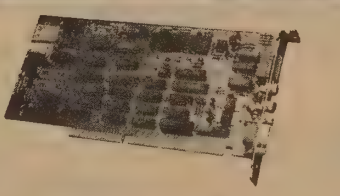
GLORIA SOUND BOARD



GLORIA is an add on system to complement the AutoDesk Animator software. GLORIA contains the necessary circuits to operate in the background relieving the Host computer from the task of recording or playing back the sound signal.

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Color Video Camera for Computer Imaging

JVC TK-1070U

The TK-1070U uses a 2/3" CCD device with 768Hx492V elements; together with the G stripe R/B filter, this makes color reproduction extremely accurate and gives a horizontal resolution of 480 TV lines. With one touch, it converts both RGB and Y/C separate signals for outputing.

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BY DAVID HAWKINS

ATARI ST

Interested in the desktop publishing business, but short on cash? How about a top-of-the-line setup for under $3,000?

Just pick up an Atari Mega4, an Atari SLM 804 Laser Printer, and a copy of Calamus, a powerful, full-featured software package. With those three items you should be able to turn out work as good as that done on $10,000 systems.

Such a system is available as a package deal from some dealers. If you've already got an Atari, you can get more information about Calamus from ISD Marketing, PO Box 3070, Markham Industrial Park, Markham, Ontario, Canada L3R 6G4, (416)479-1880.

SO HOW GOOD IS CALAMUS?

Calamus offers a full range of the features required for top-quality DTP, and the interface is very well arranged. There are a few main icons; when you click on them, a submenu of icons appears. A help line explains each icon as you move the cursor to it—one of my favorite features.

Depending on your publication needs, you might well be able to do whatever you require without buying Atari's more powerful Mega models. I have a standard Atari ST 1040, with just 1Mb of RAM, and Calamus ran just fine for short documents a couple of pages long. Large or extremely complex projects probably need more; in any case, like all desktop publishing programs, it works faster if there's more memory available.

Copyright © 1990 by David Hawkins. All rights reserved. David Hawkins is the host of the Atari conference on The WELL (415/332-6106); send email to dhawk. He has one of the first Atari ST 1040s sold in San Francisco. Both monitors, an Okimate 20 color printer, and disks are all over the room.

FEATURE HIGHLIGHTS

Calamus is quite literally "what you see is what you get." You can enlarge the screen image and see every dot. In addition to a couple of pre-set magnification levels, the program lets you change that to a custom level if you'd like.

You can rotate text with Calamus, as well as import various types of graphic images. It includes a text editor as well as a macro interpreter, so you can customize your commands. It includes a dictionary for both spelling and hyphenation, and you can edit the dictionary if you want to add or delete words.

Calamus works well with several different printers. The manual advises finding a printer with a fast transfer time. The time needed to print a page may be short with some printers, but if you find yourself taking between a minute and a half hour to transmit the page to the printer, that quickly becomes the critical factor. Calamus is very fast with the Atari Laser printer, as long as you have at least 2Mb of RAM in your Atari.

You can also use an optical scanner to read in graphics images for your file. Presently Calamus works with only three scanners, but future versions will make it possible to use any model on the market.

LEARNING TO USE CALAMUS

Calamus comes with a complete reference manual that explains every item in the window and the menus. It also has a tutorial that guides you through creating your first document.

If you want even more depth, there's now a book on Calamus available. It's *The Guide to Calamus Desktop Publishing,* also available from ISD Marketing. It's a pretty good addition to the manual and adds advanced tips for folks using Calamus. It's written by Bonnie Robinson and it's ISBN 1-550-84-000-2.

THIRD-PARTY SUPPORT FOR CALAMUS

Calamus is a very well established product now. In Europe there are currently more than one hundred programs to add capabilities to the product, and some of them are being imported to the US. More will be available once they're translated from German to English.

Some of these are programs that add fonts or allow you to edit and create new fonts.

> **With an Atari Mega4, an Atari SLM 804 Laser Printer, and a copy of Calamus you should be able to turn out work as good as that done on $10,000 systems.**

There are a lot of special printer drivers, and also programs to help you create better graphic images. You can also get disks of graphics for importing into Calamus documents.

OTHER ATARI NEWS

By the time you read this, Atari should have released the TT, an upgraded model of the machine they were planning to release last year. It's based on the 68030 chip and runs at 32MHz. It should be competitively priced, though no definite figure has been announced. The $3,000-4,000 range has been mentioned.

Rumor has it that Atari is also working on a new and cheaper laser printer. ■

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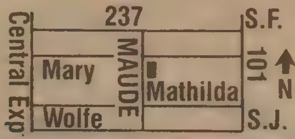

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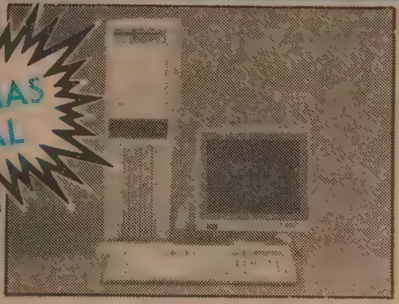

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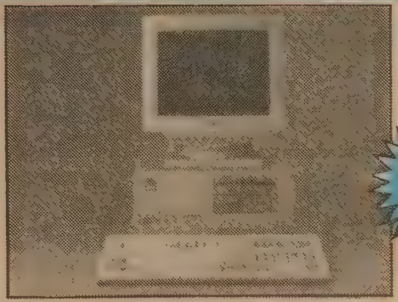

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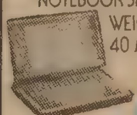

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JOYSTICK	~~15~~	9
VGA MONITOR	~~299~~	269
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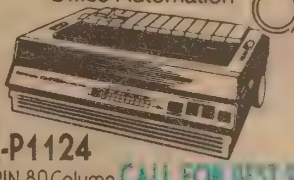

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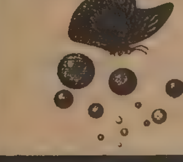

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LANDMARK = 110.8 10.5 MIPS

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Landmark = 43.5
SI = 32

120 MB RLL HARD DRIVE

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- 120 MB RLL Hard Drive
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- 2 Serial, 1 Parallel, 1 Game Port
- Real Time Clock/CMOS Memory w/Battery Back-up
- 230W Power Supply & Quality Case Holds 5 Drives
- 101 Key Enhanced Keyboard
- Supports—MS DOS, OS/2, PC-MOS/386, UNIX, XENIX, DR-DOS, Concurrent DOS 386

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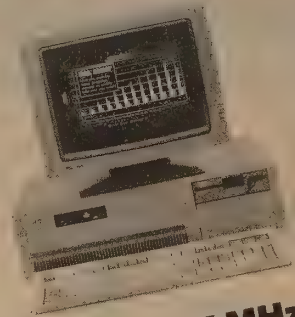

Hi-Q 20/16 DX MHz 386 SYSTEM
Landmark = 19.5 SI = 18

66 MB HARD DRIVE

- 20 MHz or 16 MHz DX CPU
- 1 MB RAM Expandable to 8 MB On-board
- 1.2 or 1.44 MB Floppy Drive
- 66 MB Hard Drive
- 1:1 Interleave Hard/Floppy Disk Controller
- 80387 Socket
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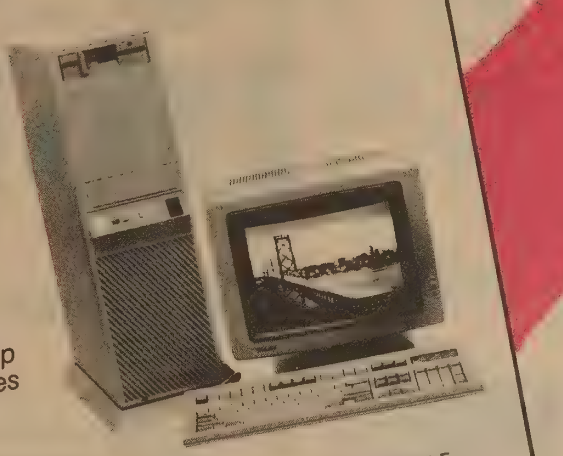
VERTICAL 386-33 w/64K CACHE

200 MB IDE HARD DRIVE SYSTEM



- Landmark = 58.5 SI = 45.9
- 1 MB RAM Expandable to 8 MB On Board
- 200 MB IDE Hard Drive
- 1.2 or 1.44 MB Floppy Disk
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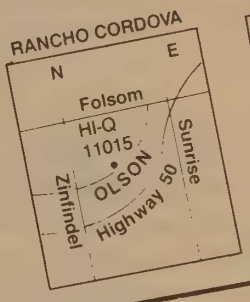

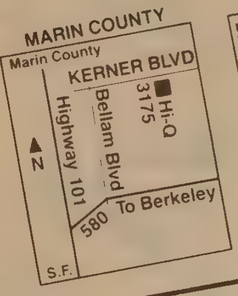

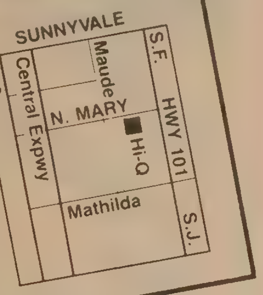

16 MHz	20 MHz
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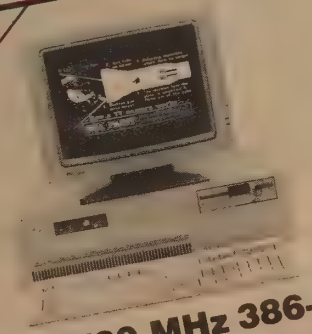
SPECIAL



Hi-Q 16/20 MHz 386-SX

Landmark = 19.5 SI = 18

66 MB HARD DRIVE

- 1 MB RAM Expandable to 8 MB On-board
- 1.2 or 1.44 MB Floppy Drive
- 66 MB Hard Drive
- 1:1 Interleave Hard/Floppy Disk Controller
- 80387 Socket
- 2 Serial, 1 Parallel, 1 Game Port
- Real Time Clock/CMOS Memory w/Battery Back-up
- 230W Power Supply & Quality Case
- 101 Key Enhanced Keyboard
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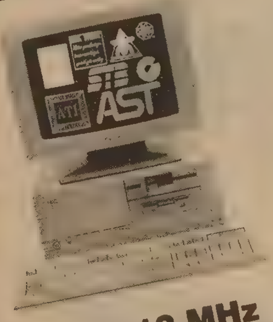

Hi-Q 12 MHz 286-AT SYSTEM COMPLETE SYSTEM

Landmark = 15.9 SI = 13.4

- 640K RAM Expandable to 4 MB On-board
- 1.2 MB or 1.44 MB Floppy Drive
- 1:1 Interleave Hard/Floppy Disk Controller
- Real Time Clock/CMOS Memory w/Battery Back-up
- 230W Power Supply & Quality Case (full or baby size)
- 101 Key Enhanced Keyboard
- MGP Card
- 12" Mono Monitor

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Holiday Cheer

Gift Ideas For The Amiga User On Your List

BY MATTHEW LEEDS

AMIGA

Copyright © 1990. All rights reserved. Matthew Leeds has been involved in the high tech field since he blew up his bedroom playing with a children's chemistry kit. He has been using Commodore computers since 1982 and has a strong interest in photography, video, graphics, and related fields.

As the end-of-the-year holidays approach, traditionally we think of giving gifts. To make your shopping decisions easier, this month I'll discuss the perfect gifts for that Amigaphile you're thinking of.

MEMORY

The first gift you should consider is memory. In almost every case, Amiga users can use more RAM. Graphics intensive applications require memory, programs run faster out of fast memory, and memory has gotten much less expensive than last year.

For the A2000 owner, the Microbotics 8UPI memory board is an excellent choice. The version that accepts SIMM memory is my personal favorite. You should also consider getting a copy of Fish Disk #241, which contains the most recent version of ASDG's recoverable RAM disk. Many people prefer it to the RAD device that Commodore supplies.

For the A500 owner, a 501 or clone memory expansion card is a must-have. There are several third party cards that offer more than the 512K on the 501, but choose carefully, as some of these cards are not 100% compatible with all A500s.

If your A500 is out of warranty, you might consider having it modified to support 1MB of chip RAM. Commodore does not support this modification, but many dealers will make this minor change on out-of-warranty machines. Some user groups will also provide this service.

UPGRADES

A1000 owners would appreciate a new Denise chip to provide support for the half-brite mode if their machine does not already have this capability. Real diehard A1000 owners would really appreciate a Rejuvenator from Expert Systems. This brings much of the functionality of the A2000 to the A1000 at a reasonable cost.

HARD DRIVES

No matter what machine your gift recipients own, if they don't own a hard drive, they're working too hard.

There are excellent external units for A500 owners like Commodore's A590, GVP's Series II A500-HD+, and IVS's Trumpcard 500. Microbotics makes an excellent hard drive controller for the A2000, and Supra and Xetec still make hard drive units for the A1000.

No matter what brand of hard drive you purchase, make certain that you also give a hard drive backup utility. Some hard drives come supplied with backup software, but the best is still Central Coast Software's Quarterback.

MODEMS

If you're trying to find a parting gift for a relationship that's ending, I'd suggest a modem. Once someone gets online their free time seems to disappear. Modems are also an excellent choice for someone with too much disposable income, since the online charges can sometimes resemble the national debt of a small country.

A good choice for someone on a budget is the Supra 2400, usually available for just over $100. More expensive, but a better product, is the Supra 2400 Plus. It adds hardware error correction and data compression protocols (MNP5 and V.42bis) that improve performance on noisy phone lines and speed data transfers.

You should also get a terminal program. I've been using an ancient version of Online from Micro-Systems Software that works fine for me, but I've heard good things about a new program called Baud Bandit from PP&S. There are also quite a few shareware terminal packages worth using.

PRINTERS

If you're thinking of getting a printer as a gift, I suggest the Hewlett Packard DeskJet 500. This is an upgrade from the DeskJet+, which is itself an upgrade from the original DeskJet. They all use an inkjet cartridge that delivers 300 DPI output while using sheet paper stock.

The DeskJet 500 is selling for around $500 these days, and at that price offers a great price/performance ratio. HP is shipping the DeskJet 500 with its new water-resistant ink. This eliminates the only complaint I've had regarding their line of printers. The new ink is also now available for owners of earlier DeskJet printers, and the package includes information on a free upgrade kit for those users who have been getting shorter-than-normal ink cartridge life. The upgrade kit requires the use of the new ink and takes

> **In almost every case, Amiga users can use more RAM. Graphics intensive applications require it, programs run faster out of fast memory, and memory has become much less expensive than last year.**

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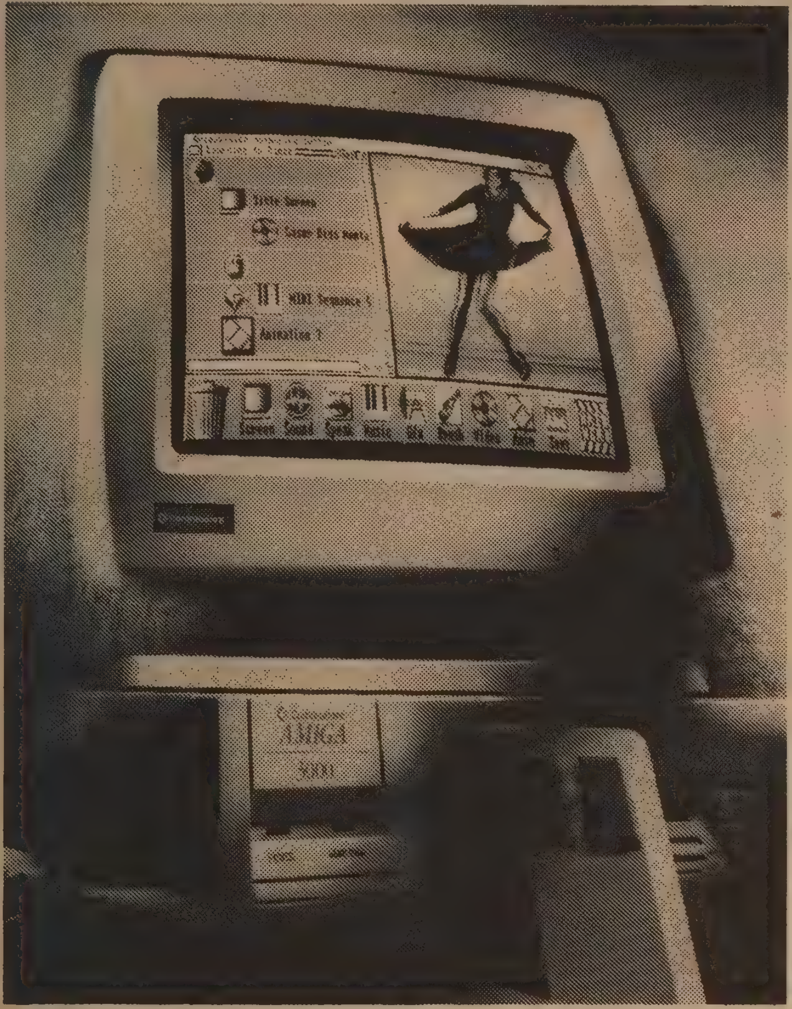

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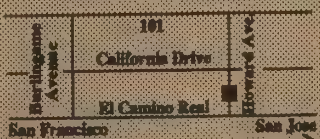

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- AMI 486 BIOS w/Shadow RAM
- 1.2MB & 1.44MB FDs (TEAC)
- 2 serial, 1 parallel, 1 game port
- 1:1 interleave ESDI controller With 32k Cache
- Keytronics 101 keyboard (USA)
- Tower case
- 230W power supply

STANDARD SYSTEM W/MONITOR & VIDEO CARD

Monitor & Video Card	No Video & Monitor	14" VGA 640 x 480 Relisys	HiRes VGA 1024 x 768 Seiko CM-1440	15" Super Multiscan
Basic System	2,795	3,180	3,430	3,530
WITH HARD DRIVE				
200MB, 19ms - IDE	3,570	3,955	4,205	4,305
158MB, 14ms - ESDI	3,675	4,060	4,310	4,410
338MB, 16ms - ESDI	4,160	4,545	4,795	4,895
768MB, 16ms - ESDI	4,660	5,045	5,295	5,395

*Maxtor Drive *Relisys Monitor

MICRO-L 386-33/Cache Network Server $1,625

- Intel 80386-33MHz CPU, Lndmk: 58.7MHz
- 33Mhz Intel 82385 Cache Contlr w/64k memory
- 4MB RAM on-board with max 16MB
- 80387 Weitek WTL 3167 co-processor socket
- True OS/2, XENIX, MS DOS, & Novell compatible
- 8 exp. slots (1-32, 6-16, 1-8 bit)
- 1:1 interleave controller or IDE
- Phoenix BIOS
- 1.2 MB & 1.44MB FDs (Teac)
- 2 serial, 1 parallel, 1 game port
- Keytronics 101 keyboard (USA)
- Tower case with 6 HHD
- 230W power supply
- MS DOS 3.3 or 4.01 included

STANDARD SYSTEM W/MONITOR & VIDEO CARD

Monitor & Video Card	No Video & Monitor	14" VGA 640 x 480	HiRes VGA 1024 x 768 Seiko CM-1440	HiRes VGA 1024 x 768 Sony 1304
Basic System -	1,625	2,010	2,260	2,475
WITH HARD DRIVE				
80MB, 19ms - IDE	2,085	2,470	2,720	2,935
100MB, 19ms - IDE	2,120	2,505	2,755	2,970
158MB, 14ms - ESDI	2,595	2,980	3,230	3,,445
338MB, 16ms - ESDI	3,060	3,445	3,695	3,910

*Maxtor Drive *Relisys Monitor

MICRO-L 386-25 Business System $1,195

- 80386-25MHz CPU, Lndmk: 28.0MHz
- True OS/2, XENIX, MS DOS, & Novell compatible
- 4MB RAM expandable to 8MB
- 80387 co-processor socket
- 1.2 MB & 1.44MB FDs (Teac)
- 1:1 interleave controller or IDE
- AMI BIOS, NEAT™ Chipset
- 8 expansion slots
- 2 serial, 1 parallel, 1 game port
- Keytronics 101keyboard (USA)
- 6-drive Baby AT case with security lock, LED indicators
- 200W power supply
- Tower Case add $85
- MS DOS 4.3 or 4.0 included

STANDARD SYSTEM W/MONITOR & VIDEO CARD

Monitor & Video Card	No Video & Monitor	14" VGA 640 x 480	14" Multiscan 800 x 600	HiRes VGA 1024 x 768 Seiko CM-1440
Basic System -	1,195	1,580	1,725	1,830
WITH HARD DRIVE				
40MB, 27ms - IDE	1,435	1,829	1,965	2,070
80MB, 19ms - IDE	1,655	2,040	2,185	2,290
100MB, 19ms - IDE	1,690	2,075	2,220	2,325

*Maxtor Drive *Relisys Monitor

MICRO-L 386-SX Executive System $665

- 80386/SX-16 CPU runs 16MHz
- 80387 co-processor socket
- 1MB RAM expandable to 8MB
- 1.2 MB floppy drive (Teac)
- True OS/2, XENIX, MS DOS, and Novell compatible
- AMI BIOS, NEAT™ Chipset
- 1:1 interleave HD/FD IDE cntrlr
- 8 expansion slots
- 2 serial, 1 parallel, 1 game port
- Keytronics 101 keybd (USA)
- 6-drive Deluxe baby-AT case with 200W Power Supply

STANDARD SYSTEM W/MONITOR & VIDEO CARD

Monitor & Video Card	No Video & Monitor	12" Flat Mono 720 x 350	14" VGA 640 x 480 Relisys	14" Multiscan 800 x 600
Basic System -	665	765	1,050	1,195
WITH HARD DRIVE				
40MB, 27ms - IDE	905	1,005	1,290	1,435
80MB, 19ms - IDE	1,125	1,225	1,510	1,655
100MB, 19ms - IDE	1,160	1,260	1,545	1,690

MICRO-L 286-12 Desktop System $415

- 80286-12.5MHz CPU
- True OS/2, XENIX, MS DOS, and Novell compatible
- 80287 co-processor socket
- 1MB RAM expandable to 4MB
- 1.2 MB floppy drive (Teac)
- AMI BIOS, VLSI
- 2 HD/2 FD IDE controller
- 8 expansion slots
- 2 serial, 1 parallel, 1 game port
- 101 Enhanced keyboard
- 6-drive Deluxe baby-AT case with 200W power supply
- 16MHz add $45

STANDARD SYSTEM W/MONITOR & VIDEO CARD

Monitor & Video Card	No Video & Monitor Included	12" Flat Mono 720 x 350	14" VGA 640 x 480 Relysis	14" VGA Multiscan Relysis
Basic System -	415	515	800	945
WITH HARD DRIVE				
40MB, 27ms -IDE	655	755	1,040	1,185
*80MB, 19ms - IDE	875	975	1,260	1,405
**100MB, 19ms - IDE	910	1,010	1,295	1,440

* Quantum drive ** Conner drive or Toshiba

MOTHERBOARDS

486-25 EISA	$2,585

Specifications:

- Intel 80486-33/25MHz
- CPU built-in floating point co-processor
- Supports external Weitek 4167
- CPU built-in first level 8K byte cache memory
- Supports 64K/256K byte second level cache memory
- AMI, Award or Quatel 486 BIOS with shadow RAM support
- Up to 64MB on-board - Uses SIMMs
- Memory configurations - from 1MB up to 10MB, 12MB, 13MB, 16MB, 32MB, 48MB, 64MB
- Eight 32-bit EISA slots
- Multi-speed software/hardware switchable
- clock/calender & battery back-up
- Landmark - 114.10MHz
- MIPS 11.104

486-25 AT w/64k upto 16MB	$1,745
386-33 w/64K CACHE w/CPU	$845
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386-25 w/CPU - ECS	$595
386-SX/20	$405
286-16 NEAT - ECS	$205
286-16 VLSI	$149
286-12 VLSI - ECS	$105

PRINTERS

Panasonic KX-P1180 9-pin	$151
Panasonic KX-P1124 24-pin	$275
Panasonic KX-P1624 24-pin	$360
Panasonic KX-P1695 24-pin	$375
Panasonic KX-P4450i 24-pin	$1,275
Citizen GSX-140 24-pin	$279

HP LASERJET MEM UPGRADES

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JetRam IIP, III-1MB,2MB,4MB	$125/160/255

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Maxtor XT-4380E 338MB	$1280
Maxtor XT-8760E 768MB	$1750
Maxtor LXT- 200MB IDE	$830
Conner CP-3044 40MB	$279
Conner CP-3184 80MB	$460
Conner CP-3104 100MB	$480
Conner CP-3204 200MB	$780
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WD IDE 40MB w/adapter, cable	$275

MONITORS

Relisys VGA RE-9513	$310
Relisys Multiscan RE-5155	$400
Relisys Super Multiscan RE-1520	$580
Relisys VGA Gry-Scl RE-9503	$129
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Genoa VGA Card 6400 (512K)	$145
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FAX modem 9600/send-Recv & software	$175
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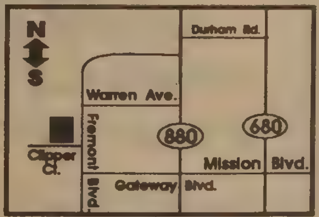

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about five minutes to install.

ERGONOMIC IMPROVEMENTS

For pure comfort you might consider several ergonomic additions to your Amigaphile's work environment. An optical mouse such as the Boing Mouse lightens the load and may reduce the likelihood of repetitive motion injury. A monitor stand or arm will make the custom placement of the monitor easier, lessening the strain on eye and neck muscles. An oversized mouse pad placed under an Amiga 2000 or 3000 will help cut the acoustical pollution from the fan and hard drive.

SOFTWARE

Then, of course, there's always software. A paint package like Deluxe Paint III or DigiPaint 3, an image processing program like The Art Department or Pixmate, or a text editor like CygnusEd Professional. A disk and file management program like DiskMaster, an audio editing program like AudioMaster, or a word processing package like ProWrite 3.1.

And then there are games: SimCity, Balance of Power, Shanghai, Battle Chess, Ishido, AREXX. It's not hard to find something that would warm the heart of an Amiga addict.

GIFT CERTIFICATE: GOOD FOR VAPORWARE

You might also consider a gift certificate good at your local Amiga dealer. Sometime early next year it seems likely that AmigaDOS 2.0 upgrade kits will become available for non-3000 machines. Since neither price nor availability has been announced yet, the exact denomination of the certificate can't be predicted, but I do suggest that the upgrade will be the single most valuable gift you could supply to a long-term Amigaphile. ■

Modems are also an excellent choice for someone with too much disposable income, since the online charges can sometimes resemble the national debt of a small country.

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- **Oakland** - Sat. Dec. 8
  Oakland Coliseum
- **Sacramento** - Sat. Dec. 15
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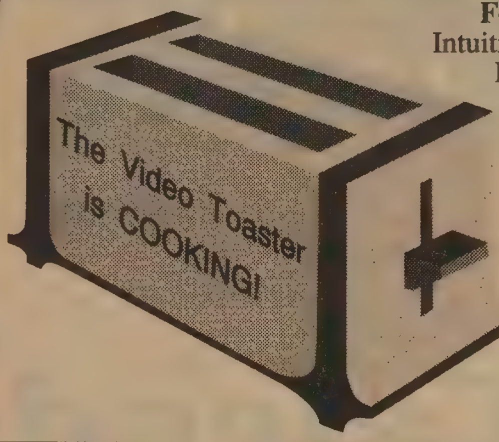
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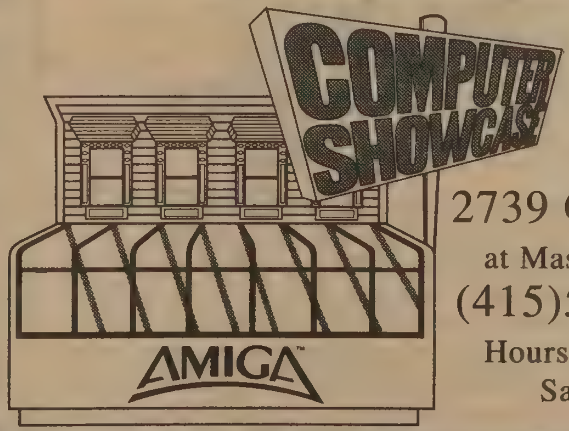

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RESOURCES

Calendar Of Events

NOVEMBER

November 21 Intro To PC DOS Class. Oakland. DataNet. Call: 1-800-879-4181.

November 24 PC Repair Class. Oakland. DataNet. Call: 1-800-879-4181.

November 25 Computer Show & Sale. Santa Rosa. East-West Computer Shows. Call: (415)388-8893.

November 26 Intro To AutoCAD & DOS Workshop. Santa Clara. The Copper Connection. Call: (408)970-9838.

November 26 The Evolving Role Of Women In Technology Workshop. Sunnyvale. Women's Computer Society. Call: (415)956-7542.

November 26–27 Informix SQL Class. San Francisco. AT&T Professional Development Center. Call: 1-800-228-0710 ext. 1996.

November 26–28 Time Line—Management Software Workshop. San Francisco. Symantec Training Group. Call: (415)898-1919.

November 26–January 21 AutoCAD Level II Class. Santa Clara. The Copper Connection. Call: (408)970-9838.

November 27 Techniques For Developing Networked Applications Forum. Sunnyvale. Software Entrepreneurs' Forum. Call: Bill Bryant, (415)490-5583.

November 27–January 22 AutoCAD Level I Class. Santa Clara. The Copper Connection. Call: (408)970-9838.

DECEMBER 2–5

Sun User Group Conference

San Jose

The Eighth Sun User Group Conference provides the opportunity for engineers, scientists, third-party vendors, end-users, developers, executives and others to listen, share experiences, and learn how to better deal with both hardware and software decisions. This year's show will feature over one hundred technical sessions, divided into five major categories: Instructional, Systems Administration, Performance, Scientific Applications and Commercial Applications. There will also be tutorials and over two hundred exhibits. Contact: Sun User Group, Inc., 2550 Garcia Ave., M/S Pal I-440, Mountain View, CA 94043-1100. (415)336-0564.

November 28 Breakthrough To Computer Literacy Seminar. Emeryville. Breakthrough Systems. Call: (415)222-5009.

November 28 Intermediate SAMNA IV Class. Pleasanton. AT&T Professional Development Center. Call: 1-800-228-0710 ext. 1996.

November 28–29 On Emerging Software Technologies Conference. San Francisco. Digital Consulting, Inc. Call: (508)470-3880.

November 28–29 The 1990 LAN-based Facsimile Conference. Monterey. BIS CAP International. Call: 1-800-874-9980.

November 28–30 LANs And Image Communications: Applications For Increasing Productivity Conference And Exposition. Monterey. BIS CAP International. Call: Kathy Greeley, (617) 893-9130.

November 28–December 20 PageMaker 3 Class. San Francisco. San Francisco Community College. Call: (415)267-6500.

November 29 Using HyperCard: Basics & Beyond Class. San Francisco. Abacus. Call: Deborah or Michael, (415)759-4655.

November 29 Xerox Ventura Publisher 3.0 Windows/Macintosh Editions Seminar. Sunnyvale. M & P Computer. Call: Donna, (408)738-8578.

November 30 Intro To HyperCard Class Santa Clara. Mission College. Call: (408)727-7584.

DECEMBER

December 1 Computer Swap. San Francisco. Computer Swap. Call: 1-800-433-7469.

December 1 Desktop Publishing Workshop. Sunnyvale. M & P Computer. Call: Donna, (408)738-8578.

December 1 IBM PC Clone Troubleshooting And Repair Class. Oakland. Excel Micro Solutions. Call: (415)836-2040.

December 1 Installing NetWare 286 Class. Oakland. DataNet. Call: 1-800-879-4181.

December 2 Computer Show & Sale. San Rafael. East-West Computer Shows. Call: (415)388-8893.

December 3 Intro To Telecommunications: A Seminar For Beginners. Berkeley. BMUG. Call: (415)549-2684.

December 3 MS-DOS For CAD, Level 1 Class. San Francisco. San Francisco State University Extended Education. Call: (415)338-1205.

December 3–5 Small Business/Home Office Conference: Coordinating Product, Market, And Distribution. Monterey. BIS CAP International. Call: Kathy Greeley, (617) 893-9130.

December 4 Breakthrough To Computer Literacy Seminar. Emeryville. Breakthrough Systems. Call: (415)222-5009.

December 4 Intro To The Mac Class. San Francisco. Abacus. Call: Deborah or Michael, (415)759-4655.

December 4 LAN Use And Abuse With KnowledgeMan Seminar. Walnut Creek. BAKMUG. Call: (415)947-GURU.

December 4–7 Basic AutoCAD, Level 1 Class. San Francisco. San Francisco State University Extended Education. Call: (415)338-1205.

December 5–7 Time Line—Management Software Workshop. San Francisco. Symantec Training Group. Call: (415)898-1919.

December 6 Macintosh Bible Authors Pres-

NOVEMBER 26

Computer Literacy Bookshop

Cupertino

Mark Hall and John Barry, former editors of Sun Microsystem's in-house magazine and authors of *Sunburst: The Ascent of Sun Microsystems*, share insights and anecdotes about one of Silicon Valley's most meteoric success stories. Reception begins at 6:00 pm, Computer Literacy Bookshop, 20100 Stevens Creek Blvd., Cupertino. (408)973-9955.

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Samsung Gray Scale 640x480	155
CTX VGA Multiscan 1024x768	459
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Dexxa Mouse (By Logitech)	35

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LQ2550	919

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KX1624	389

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Calendar Of Events *continued*

entation. Cupertino. Computer Literacy Bookshop. Call: (408)973-9955.

December 6 Character Animation By Computer: At Its Best (Or Life Beyond Luxo Jr.) Lecture. San Francisco. USF. Call: (415)666-6530.

December 6–7 Integration Image & Information Processing Conference. San Francisco. Digital Consulting, Inc. Call: (508)470-3880.

December 7 A Second PageMaker Class. Santa Clara. Mission College. Call: (408)727-7584.

December 7 Basic Macintosh Hardware Class. San Francisco. Abacus. Call: Deborah or Michael, (415)759-4655.

December 7 Using Studio 8 Class. San Francisco. Abacus. Call: Deborah or Michael, (415)759-4655.

December 8 Computer Mart. Cupertino. De Anza College. Call: (408)864-8581.

December 8 Computer Show & Sale. Oakland. East-West Computer Shows. Call: (415)388-8893.

December 8 Computer Swap. Santa Clara. Computer Swap. Call: 1-800-433-7469.

December 8 Novell Workshop Workshop. Sunnyvale. M & P Computer. Call: Donna, (408)738-8578.

December 10 MS-DOS For CAD, Level 2 Class. San Francisco. San Francisco State University Extended Education. Call: (415)338-1205.

December 10 Plan, Manage & Communicate—Effective Project Management Workshop. San Francisco. Symantec Training Group. Call: (415)898-1919.

DECEMBER 10–11

First Annual Virtual Reality Conference

Cathedral Hill Hotel, San Francisco

"Virtual Reality: Theory, Practice and Promise" is the first international conference dedicated to virtual reality—the emerging field of computer generated realities. The conference will be divided into three major themes: the ideological and philosophical orientations that will support virtual reality (VR) systems, viewing actual virtual environments and systems, and the future development and implementation of VR in a variety of applications. Participants include Myron Krueger, Nicole Stenger, University of Pittsburgh Assistant Professor, and Randal Walser, AutoDesk Manager of Cyberspace Project. Contact: Meckler Conference Management, 11 Ferry Lane W., Westport, CT 06880. 1-800-635-5537 or (203)226-6967.

December 10–11 Interactive Multimedia Seminar. San Francisco. MacroMind. Call: (415)442-0200, ext. 225 or 222.

December 11–14 Optimizing & Customizing AutoCAD, Level 3 Class. San Francisco. San Francisco State University Extended Education. Call: (415)338-1205.

December 12 Adobe Illustrator: Advanced Class. San Francisco. Abacus. Call: Deborah or Michael, (415)759-4655.

December 12 Paradox Class. Walnut Creek. Computer Education Center. Call: (415)937-2566.

December 13 Installing NetWare 386 Class. Oakland. DataNet. Call: 1-800-879-4181.

December 13 PC Fundamentals Class. Walnut Creek. Computer Education Center. Call: (415)937-2566.

December 13 Q & A Workshop. San Francisco. Symantec Software Corp. Call: (415)899-8265.

December 14 Desktop Design: Basics Class. San Francisco. Abacus. Call: Deborah or Michael, (415)759-4655.

December 15 Computer Swap. Alameda. Computer Swap. Call: 1-800-433-7469.

December 15 Troubleshooting A Novell Network Class. Oakland. DataNet. Call: 1-800-879-4181.

December 16 Computer Show & Sale. Vallejo. East-West Computer Shows. Call: (415)388-8893.

December 17 WordPerfect For The Legal Profession Class. Walnut Creek. Computer Education Center. Call: (415)937-2566.

December 17–19 Time Line—Management Software Workshop. San Francisco. Symantec Training Group. Call: (415)898-1919.

December 17 Pathways To The Top: Pointers From An Entrepreneurial Pro Seminar. Santa Clara. SVEC. Call: (408)562-6040.

December 18 The NeXT Computer And Its Software Seminar. San Francisco. San Francisco Business Computers. Call: (415)788-5338.

December 18–21 Hands-on UNIX Systems And Applications Programming In C Course. San Francisco. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

December 19 Intermediate Lotus Class. Walnut Creek. Computer Education Center. Call: (415)937-2566.

December 20 Accounting Systems Seminar. Oakland. David A. Simon, CPA. Call: (415)893-5753.

December 20 MacDraw Class. San Francisco. Abacus. Call: Deborah or Michael, (415)759-4655.

December 20 NetWare 386 System Administrator Class. Oakland. DataNet. Call: 1-800-879-4181.

December 21 NetWare 286 System Administrator Class. Oakland. DataNet. Call: 1-800-879-4181.

December 30 Computer Show. San Francisco Fort Mason Shows. Call: (916)725-0228.

JANUARY

January 4 & 11 Intro To QuarkXpress Class. Santa Clara. Mission College. Call: (408)727-7584.

January 7 Q & A Workshop. San Francisco. Symantec Software Corp. Call: (415)899-8265.

January 8 New Interactive Technologies And Systems Consumer Applications Presentation. San Francisco. IICS. Call: (408)866-7941.

January 8–11 LAN Troubleshooting With Hands-on Ethernet Workshop Course. San Francisco. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

January 9–11 Time Line Workshop. San Francisco. Symantec Software Corp. Call: (415)899-8265.

January 12 Computer Mart. Cupertino. De Anza College. Call: (408)864-8581.

January 12–15 Mathematica Conference. San Francisco. Wolfram Research. Call: (217)398-0700, Email: conf@wri.com.

January 13 Computer Show. San Francisco Fort Mason Shows. Call: (916)725-0228.

January 21–22 Moving From Mainframes to PCs—The Downsizing Conference. San Francisco. Digital Consulting. Call: (508)470-3880.

January 22 WordPerfect For Windows Demonstration. San Francisco. San Francisco Business Computers. Call: (415)788-5338.

January 22–24 Sixth International Conference On Multimedia And CD-ROM. San Francisco. Microsoft. Call: Mark LoGiurato, (203)352-8224.

January 24–25 Mastering The Macintosh Seminar. San Francisco. US Professional Development Institute. Call: (301)445-4400.

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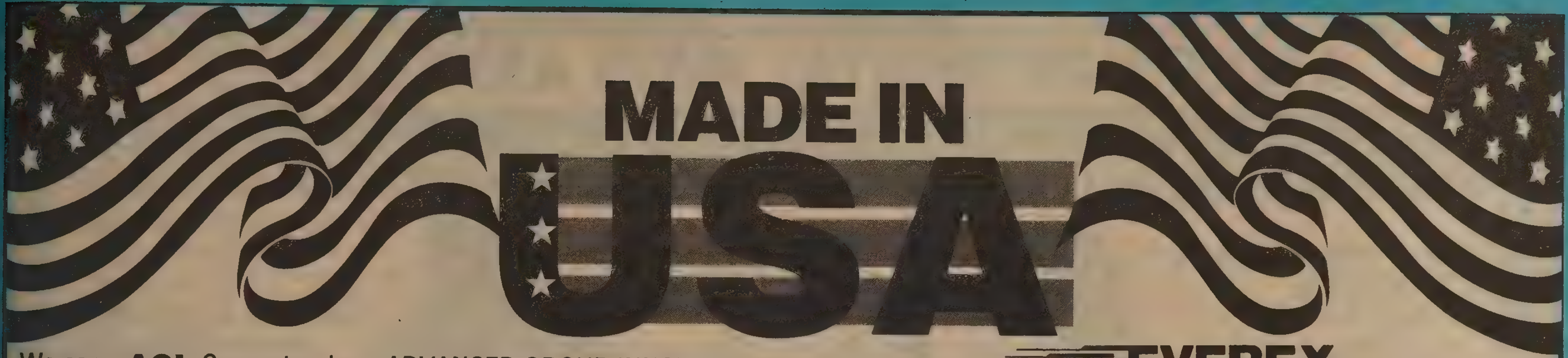

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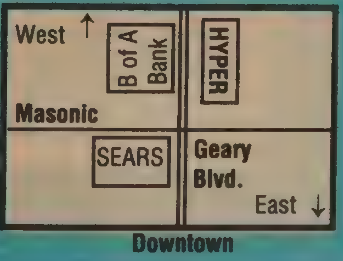

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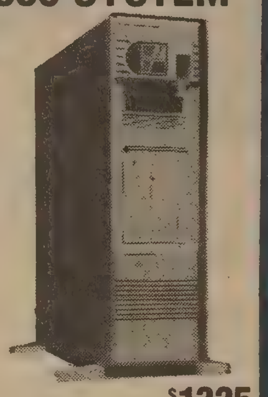

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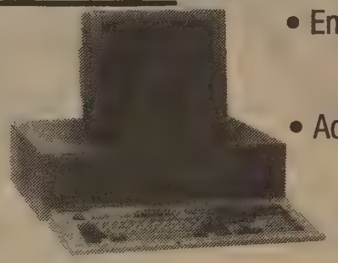

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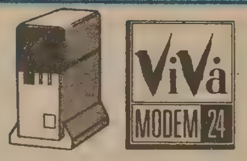

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DC_>Light BBS. (408)262-5150. 8-N-1, 24 hrs., 300/1200/2400. MS-DOS, CAD, UNIX, GIF, WIN; Techie talk and help. 700Mb online. Sysop: Fred Townsend. [Exp. #76.]

Dirt Alert OHV BBS. (408)247-3229. 8-N-1, 24 hrs., 300/600/1200/2400. Text only OHV environmental activists BBS for the protection and preservation of Off Highway Vehicle areas. [Exp. #81.]

Diversified I/O BBS. (408)745-7026. 8-N-1, 24 hrs., 300/1200/2400. Product info and tech support for Diversified I/O Macintosh software. Sysop: Diversified I/O, Inc. [Exp. #79.]

Doghouse BBS. (408)997-7352. 300/1200/2400. An Atari BBS. Sysop: Dave Sillas. [Exp. #78.]

First Indigo Board. (408)459-6710. 8-N-1, 24 hrs., 1200. Brand new. [Exp. #76.]

Hognet. (408)732-8958, 248-4736. 8-N-1, 300/1200/2400. Sysop: Alison Denu (Hog-I), Bruce Grembowski (Hog-II). [Exp. #78.]

Inferno San Jose. (408)289-1431. 300/1200/2400. 25 lines, multi-chat, D/L libraries, games. [Exp. #76.]

Midnight Express. (408)248-2352. 24 hrs., 50 door games, 337Mb, 2 nodes. [Exp. #76.]

Mountain Retreat BBS. (408)335-4595. Speciality Turbo Pascal, FidoNet, Pascal Echo. Sysop: John Jamieson. [Exp. #76.]

P.I.E. (Programming And Interfacing Enthusiasts) BBS. (408)733-4670. Sysop: Clay Walker. [Exp. #78.]

Portal System (TM). (408)725-0561. 8-N-1, 24 hrs., 300/1200/2400. Multi-user chat, games, SIGs, email, Usenet, and more. Dial direct or use Sprintnet/Telenet or PCPursuit. [Exp. #76.]

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SANJOSE FrEdMail Node. (408)946-7325. BBS just for teachers. Sysop: Robert Wright. [Exp. #76.]

SCV-TICP, Silicon Valley Refuge of TI Pro Users. (408)296-2503. 8-N-1, 24 hrs., 300/1200/2400. Sysop: Mark Cantrell. [Exp. #81.]

Teleplay FRP. (408)262-4488, 446-4022. 300. 15 line, D&D fantasy role playing, real-time interactive simulation of life & death in mid-evil times. Sysop: Marquee. [Exp. #76.]

The Animated BBS. (408)265-9389. 24 hrs., 300/1200/2400. Matchmaker database, Gifs and other files for downloading. Sysop: Thomas Tencaves. [Exp. #76.]

The Coral Reef BBS. (408)449-6346. 300—38400. Multiline. Sysop: David Fogle. [Exp. #78.]

The Fantasy Network—San Jose. (408)985-1529. 8-N-1, 300/1200/2400. Multi-line interactive, D&D fantasy game. [Exp. #76.]

The Lion's Den. (408)578-5724. 8-N-1, 24 hrs., 300/1200/2400. PD/shareware downloads, various echoes/FidoNet 1:143/370, adult session reg required. [Exp. #76.]

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Vietnam Veterans Valhalla. (408)298-2740. 8-N-1, 24 hrs., 300/1200/2400/9600. Fidonet 1:143/27. Veterans' benefits, International EchoConference, NAMVET Newsletter, Recovery system. [Exp. #76.]

415

& the Temple of the Screaming Electron. (415)935-5845. Raw data for raw nerves, home of NIRVANAnet(tm). Sysop: Jeff Hunter. [Exp. #79.]

Abacus BBS. (415)587-8062. 300/1200/2400. Atari Bay Area Computer Users Society (Abacus) for 8 bit and ST. [Exp. #76.]

All Antique Radio BBS. (415)491-0214. 8-N-1, 24 hrs., 300/1200/2400. [Exp. #78.]

Art/Online! BBS. (415)255-7045. 8-N-1, 300/1200/2400/9600. Forum for all interested in Fine Art, new artists and novices welcome, ansi color support. Sysop: Jim Raridan. [Exp. #78.]

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C.O.W. BBS. (415)359-5975. 24 hrs., 300/1200. Commodore and Amiga oriented user group. Sysop: Steve Beale. [Exp. #78.]

California ConneXion Partyline. (415)927-2739. 8-N-1, 24 hrs., 300/1200/8400. 300Mb, 9 lines, chat, worldwide network, 25+ pubs, matchmaking, adults only. Reg required. [Exp. #79.]

Career Network International. (415)992-8914, 992-8969. 8-N-1, 300/1200/2400. RideShare USA, JobBank, Success Skills Development, library, conference. Sysop: Victoria Chow. Voice: (415)991-6220 am. [Exp. #76.]

Castle Of Blackthorn. (415)638-2937. 24 hrs., 300/1200/2400. Atari, IBM, Mac, Comie, SIGs, message boards and online games. Sysop: Blackthorn and British. [Exp. #76.]

CIN-SF Network. (415)239-7925. Free, files, good discussions, topics include politics, social issues, ethics and religion. Sysop: Hugh O'Regan. [Exp. #78.]

COAST User Group BBS. (415)658-6194. 300/1200/2400. 40Mb running FORUM ST. Sysop: Mark. [Exp. #76.]

Compact Disc Exchange. (415)824-7603. 24 hrs., 300/1200/2400. Online CD exchange network. Buy/sell used CDs and collectable discs. Voice: (415)826-9350. Sysop: Wayne Gregori. [Exp. #78.]

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HDM BBS. (415)682-1371. 24 hrs., 1200/2400. DOS files, msg section. Automotive, sterophonic performance. Sysop: Bill Plein. [Exp. #76.]

Hints BBS. (415)572-8219. 1200/2400/9600. Inter:DOS/CPM/Mac, Bus applications, medicine, animal, astronomy. Sysop: Ernest E. Hintz. [Exp. #76.]

HTG/Outreach BBS. (415)572-9594. 8-N-1, 24 hrs., 300/1200/2400. 4-line, security conf. info., echo conf. (HTG_Ecjo, HTG_Jobs, Bears, Women, AIDS/ARC, TV/TS, Virus_Info., & more), CB char, files, free/open access. Sysop: Sagittarius. [Exp. #76.]

Inferno Fremont. (415)490-1170. 300/1200/2400. 25 lines, multi-chat, D/L libraries, games. Sysop: Jerry Christensen. [Exp. #76.]

Inferno Palo Alto. (415)856-8746. 300/1200/2400. 25 lines, multi-chat, D/L libraries, games. [Exp. #76.]

Jobs-on-line. (415)324-3780. 8-N-1, 300/1200/2400. 16-line High-tech Employment/Business, opportunity search service. [Exp. #78.]

Just Say Yes! Freedom Of Information. (415)922-2008. Home of NIRVANAnet(tm). Sysop: Dr. Strangelove. [Exp. #78.]

Nightingale. (415)292-7314. Fidonet 1:10/475 Signet 26:1415/0. A general nursing BBS, open to all. "Medfiles", medical and nursing echomail, and "Medware" continuing education programs. Sysop: Jim Rankin. [Exp. #78.]

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Skeptic's Board. (415)648-8944. Paranormal/fringe science issues, Bay Area Skeptics. Recording, (415)LA-TRUTH. Sysop: Rick Moen. [Exp. #78.]

Songtech BBS. (415)770-9655. 24 hrs., Computer store, IBM software and hardware. [Exp. #78.]

SPACE–Stanford Palo Alto Computer Exchange. (415)323-4193. 1200/2400/9600. 1.8Gb, extensive, well-cataloged files for DOS, OS/2 and MS Windows, technical concentration. Sysop: Jay Fox. [Exp. #76.]

Starnet Connections. (415)949-3133. 300/1200/2400/9600. Full UNIX, USENET, email, gnu, compilers, sh/csh, public domain software. Sysop: Richard Mahn. [Exp. #78.]

SuperResume. (415)546-0119. 8-N-1, 24 hrs., 300/1200. Free features include: Software Engineer Resume Composition Outline, Software Career Strategy Conf., job listings. [Exp. #76.]

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The Carrier Cafe. (415)563-3384. 300/1200/2400. Commodore 64/128 support! 40Mb, no credits. A color 64 BBS. Sysop: Norman. [Exp. #76.]

The Castle BBS. (415)355-2396. 8-N-1, 2400. Amiga and UFO/Mystic enthusiasts. Voice: (415)355-7111. Sysop: Christopher "StarLord" Coloquon. [Exp. #78.]

The Fantasy Network—Belmont. (415)637-1518. 8-N-1, 300/1200/2400. Multi-line interactive, D&D fantasy game. [Exp. #76.]

The Fantasy Network—Fremont. (415)490-7177. 8-N-1,

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The Interlude. (415)458-4344. 8 pm–2 am, Thurs.–Sun. Singles, matchmaking, sq. dancing and more. [Exp. #76.]

The KayFun Computer Club. (415)571-9259. 24 hrs., 300/1200/2400. CP/M and DOS, 230Mb storage, online echomail. Sysop: Bob Wallace. [Exp. #78.]

The Machine BBS. (415)345-2353. Amiga SKYPIX or 8-N-1 ANSI, 24 hrs., 300/1200/2400. Sysop: Eric Penn. [Exp. #78.]

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The MIDI-Exchange BBS. (415)771-1788. Home of the San Francisco MIDI User Group and the Casino West Coast FZ-Shareware library. Sysop: Walt Perko [Exp. #76.]

The Pilgrim. (415)731-2422. Signet 26:1415/1. "Town Meeting" BBS focusing on current events, spirituality, and issues around homosexuality, from a Catholic perspective. Sysop: Jim Rankin. [Exp. #79.]

The Software Objective. (415)226-6160. 2400 MNPS OPP & software Q&A. [Exp. #76.]

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The Transporter BBS. (415)441-0616 Rbbs–Net 8:914/209 and SmartNet #5021. Email in over 50 conferences, good discussions. Sysop: Steve Clifford. [Exp. #80.]

The Wizard's Workshop. (415)827-9791. 8-N-1, 24 hrs., 300/1200/2400/9600. Amiga Zmodem transfers, 110Mb, discussions on the C programming language. Sysop: Nick Smith. [Exp. #76.]

Triple T. (415)458-6404. 24 hrs., 1200/2400/9600. Education/health/kitchen/lottery and more. 140Mb 30 file directories. Sysop: Peter Tiffany. [Exp. #76.]

Uncle "D"s Directory. (415)364-3001. 8-N-1, 24 hrs., 1200/2400. Seeking software to assist hearing impaired juveniles. Upload/download mail. Sysop: Dave Spensely. [Exp. #76.]

VA Listings. (415)744-7793. 24 hrs., 300/1200/2400. VA-owned homes for sale. Sysop: David Piersall. [Exp. #78.]

Wetware Diversions. (415)753-5265. 8-N-1, 24 hrs., 1200/2400. Multi-line, PC pursuitable, S.F. Public Access UNIX System. Sysop: Christopher Cilley (cc@wet.UUCP). [Exp. #79.]

Wild at Heart! BBS. (415)687-4352. 8-N-1, 24 hrs., closed Sun., 300/1200/2400. MS-DOS NetMail, Commodore 64/128 welcome, comics, baseball cards. Sysop: Steve Rochin. [Exp. #78.]

Window World BBS. (415)931-0649. 24 hrs., For people who use MS Windows or Quarterdeck products. Sysop: Bob Cram. [Exp. #76.]

Wishing Well. (415)745-7901. 24 hrs., 300/1200/2400. Message, email, games, files, matchmaker, no feel. Sysop: Michael and MaryLou. [Exp. #76.]

Zone BBS. (415)965-3556. 8-N-1, 24 hrs., 1200/2400. 122Mb online, Fidonet, online gaming, supports all computers. Sysop: Ron Schultz. [Exp. #76.]

707

Apple GS User Group BBS. (707)538-8129. 12 networked services, including email, online games and transfer section for software. [Exp. #76.]

MacComm Connection. (707)795-1721. Amiga, Mac and UNIX/XENIX, 200Mb, multi-line. [Exp. #76.]

Spatula City BBS. (707)451-2835. 24 hrs., 1200/2400. MIDI and Amiga-oriented, KrogM1 and DX-100 support. [Exp. #76.]

The Darkside of the Moon BBS. (707)451-3323. 8-N-1, 24 hrs., 300/1200/2400/9600. 140 megs. Running Wildcat! multi-chat, game doors, email, shareware. Sysop: Stephen Cannon. [Exp. #76.]

The Power Station. (707)552-0462. 300/1200/2400. Node 2, (707)554-8612; Node 3 (707)645-8780. 415Mb online, supporting IBM and Amiga. [Exp. #78.]

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Drug Abuse Information (DAIMP). 1-800-825-3736. 8-N-1, 24 hrs., 300/1200/2400. Drug information, statistics, bibliographies, forums, email, downloads and uploads. Free membership, reg. requested. Sysop: Greg Cason. [Exp. #78.]

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Independent Computer Consultants Assn. Referral Service. Designed to give public access to the knowledge and experience of Assoc. members, no fee. Call: Referral Service Hotline, (408)980-7272. [Exp. #79.]

Independent Computer Consultants Association. Meetings: 3rd Wed., 6:00 pm. Meetings are open to non-members and members. Call: ICCA, (415)441-2948. [Exp. #79.]

Software Entrepreneurs' Forum. Call: Barbara Cass, (415)854-7219. [Exp. #79.]

United Sysops Association (U.S.A.). Meetings: 2nd Wed., 7:00 pm, call for location. SIG for BBS sysops and users. Call: Bill Strouse, (415)453-3321. [Exp. #75].

Women's Computer Society. Call: Tanya Halepota, (415)949-3936. [Exp. #79.]

Writer's On-line Association Of Technical Communicators. Meetings: Weekly, Berkeley. Call: Cynthia Kolnick, (415)673-5819. [Exp. #79.]

USER GROUPS

ACCOUNTING

Accounting East Bay User Group. Meetings: 4601 Clipper Ct., Fremont. Call: Phrede Deese, (415)657-5880, BBS (415)795-4268. [Exp. # 80.]

Computer Associates User Group. Meetings: 1st month of quarter on 3rd Wed., Holiday Inn, 1500 Van Ness. Come share ideas and information with other local users of Computer Associates Accounting Software! Call: Beth E. Markus, (415)864-6770. [Exp. #76.]

On-line Accounting Users Group. Call: Bob, (415)686-3304. [Exp. #80.]

San Francisco Bay Area Platinum User Group. Call: Steve Koss, (415)562-2754, or Jim Britton, (415)576-3209. [Exp. #76.]

AMIGA

ALF—Amiga Learners Forum. Meetings: 3rd Sun., 6:00 pm, Cupertino Library. Call: (408)262-9334. Beginners group. [Exp. #76.]

Amiga ACCESS (Amiga & Commodore Computer Enthusiasts Society). Meetings: 2nd Thurs., 7:00 pm, Livermore/Pleasanton. PD libraries. Call: Paul, (415)829-6053. [Exp. #76.]

ASCITEC: The Amiga Science & Technology Users Group. Meetings: 2nd Thurs., 5-7 pm, Lockheed, B/157, Rm. 4-C, Sunnyvale. Scientific/Video Applications. Classes available. Call: (408)756-4268. [Exp. #76.]

AUM—Amiga Users Of Marin. Meetings: 3rd Wed., 7:30 pm, College of Marin, Science Center, Room 190. Call: Bob Galvan, (415)924-5384. [Exp. #76.]

COW—Commodore Owner's Workshop User Group. Meetings: 3rd Thurs., 7:00 pm, San Bruno Parks & Rec Bldg. No dudes! Call: Steve Beale, (415)355-8927, BBS (415)359-5975. [Exp. #81.]

Northern California Amiga Club. Meetings: 2nd Sat., 2:00 pm, Rico's Pizza, 200 Hartnell, Redding. Call: (916)472-3287. [Exp. #76.]

Valley Computer Club (VCC). Meetings: 1st Wed., Turlock Jr. High School. C64/C128 Amiga and Commodore MS-DOS users group. Call: (209)529-8473 or 668-8636. [Exp. #76.]

APL

APL Bay Area Users Group. Meetings: 2nd Mon., 7:00 pm, variable. Call: Tibor Horvath, (415)283-5611. [Exp. #76.]

APPLE

ABUG—Apple Blossom User Group. Meetings: Apple II Group 1st Wed., Mac Group 3rd Wed. Write for info: P.O. Box 53323, San Jose, 95123. Call: (408)395-7900. [Exp. # 76.]

Apple SAC—Apple II. Meetings: 1st Wed. and 3rd Tues. Call: (916)991-7313. [Exp. #76.]

GravenStein Apple IIGS User Group. Meetings: 3rd Sat., 10:00 am, West America Bank, McDowell Ave, Petaluma. Call: (707)763-1428. [Exp. #80.]

San Francisco State Univ. Apple Core. Meetings: 2nd Tues., 7:00 pm, Hensill Hall, Rm. 205. An Apple II user group. BBSes, newsletter, demos, mentoring, swaps, DTP and telecom sub groups. Call: (415)771-5830. [Exp. #76.]

AT&T UNIX

AT&T Computer User Group-North Bay. Meetings: 1st Wed., new user education, 6:00 pm, program, 7:00 pm, San Francisco AT&T Bldg., 50 Fremont St. Call: Joe Mahoney, (415)584-6510; BBS (415)829-6027. [Exp. #78.]

AT&T Computer User Group-South Bay. Meetings: 3rd Wed., new user education, 6:00 pm, program, 7:00 pm, Sunnyvale AT&T Bldg., 1090 E. Duane Ave. Call: Joe Lipsig, (408)733-6522; BBS (408)946-7734. [Exp. #78.]

AT&T UNIX Computer User Group-South Bay. Meetings: 4th Wed., new user education, 6:30 pm, program, 7:00 pm, Sunnyvale AT&T Bldg., 1090 E. Duane Ave. Call: Thad Floryan, (408)985-7100; USENET, thad@cup.portal.com. [Exp. #78.]

San Leandro Computer Club. Meetings: 1st Tues., 8:00 pm, San Leandro Community Library. Call: Keith Simmons, (415)887-2008. [Exp. #76.]

ATARI

Bay Area Atari Users Group (BAAUG). Meetings: 1st Mon., 7:30 pm, Agnews Hospital Auditorium, Palm Rd. and Circle Dr., San Jose. Call: Joe Fischer, (408)988-3065. [Exp. #78.]

COAST (CA Original Atari ST User Group). Meetings: 3rd Wed., 6:45 pm, 550 El Embarcadero, Oakland. The 1st Wed special beginners met for members. Call: (415)945-1949. [Exp. #80.]

San Leandro Computer Club. Meetings: 1st Tues., 8:00 pm, San Leandro Community Library. Call: Keith Simmons, (415)887-2008. [Exp. #76.]

South County Atari User Group. Meetings: 2nd Wed., 7:00 pm, San Jose Computers, 1278 Alma Ct., San Jose. Call: C. Ron Reade, (408)225-7162. [Exp. #81.]

CAD/CAM

AutoCAD DCA Engineering Software Users Group. Meetings: 3rd Wed. Call for location. Call: Mike Foley, (415)734-0707. [Exp. #77.]

Marin ACAD User Group. Meetings: 1st. Thurs. Call: Gigi Bollinger-Himes, (415)491-4722. [Exp. #80.]

S.F. AutoCAD User Group. Meetings: 1st Mon., 6:30 pm, SFAIA, 130 Sutter St., 6th fl. Call: Katie Price, (415)923-9228. [Exp. #81.]

SF Bay Area C.A.S.E. Users Group. Meetings: Once per quarter. Call: David Plotkin, (415)842-6706. [Exp. #76.]

Textile Computer Users Group—TCUG. Meetings: Bimonthly, 1st Sun., 10:00–noon. Bedford Hotel, San Francisco. Call: (415)284-1635. [Exp. #76.]

COMMODORE

Commodore Hayward User Group (C=HUG). Meetings: 2nd Sat., 2:00 pm, Palma Ceia Park, Hayward. Organized to help all Commodore computer users by providing info and demos. Call: Bob Bucy, (415)792-7057. [Exp. #77.]

Cupertino Chapter Of 64/More Commodore User Group. Meetings: 3rd Sun., 6:00 pm,

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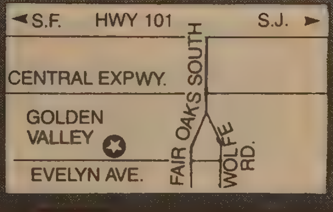

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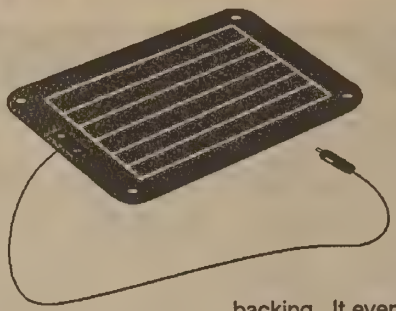
Think of the the techno-hobbyist on your list while looking at this page!

Something new under the sun...



...or at least it could be new under the sun on top of the dashboard in your car! This unique item will help prevent your car battery from going flat during the day time...with free electricity! It is a conveniently-sized 125 mA solar panel with a plug that goes into your cigarette lighter. Toss it up on your dashboard in full sun and you have a battery trickle-charger that costs nothing to operate! That's like free energy, and is especially useful if your aging battery has a tendency to go flat after a while. Perfect for autos that are not used very often (in sunny locations, anyway!), as well as boats, RV's, trucks and campers. It is only 13" x 9.5", so it is easily stowed when not in use. Using the latest amorphous solar cell technology (it's flexible!), it is ruggedly packaged with stitched roll-bound edges, protective plastic covering and smooth foam backing. It even has metal grommets at the corners for hanging. These are new items, and carry a 90-day warranty. Only **$69.95**

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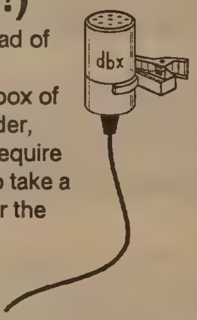
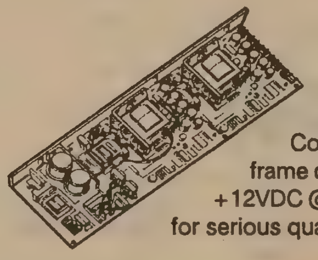
Mystery Microphone may be Mini-Electret (You tell us!)



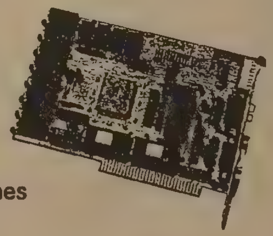
We are going to present you with a theory here, and see if you agree. We recently picked up a large load of audio equipment (linear-tracking turntables, CD Players, Graphic Equalizers and components) That will probably be gone by the time you read this (but it can't hurt to call!), and we uncovered this mystery. A box of these pretty little microphones attracted our attention, but when we tried one out on a normal tape recorder, we got no output. Someone proposed the idea that they were electret condenser microphones, which require a voltage source. Well, they only have a two conducter 1/4" phone plug on them, and they don't open to take a battery. Not being heavy duty audiophiles, we were stumped! Could it be that they get their voltage over the signal conductor? This might be your chance to score a pair of high-quality electret microphones at a bargain price. They have a twenty-foot cord, so we thought they might work with a graphic equalizer-with a built-in spectrum analyzer, but they don't match any of the ones we have. Mysterious! At this price though, you can afford to experiment! **Two for $15.00**

Switching Supplies for Serious Power Users



We were kicking open boxes in our warehouse recently, and found a mountain of these nice, beefy, switching power supplies. 250 Watts! That is some serious power, and if you are a serious power user, you will be pleased at the price. These units (similar to illustration) are made by Conversion Equipment Corp. (CEC), model #05D-0242-01B, are brand new, and feature open-frame construction, with overall dimensions of 5" x 2.5" x 13.5". They are load-rated at 5VDC @ 32A, +12VDC @ 4A, and -12VDC @ 1A. We are looking for **$17.50** a piece, but you can get a serious discount for serious quantities. Give us a call!

Everex EGA Power with Composite Video Output!



This Everex EGA Board (Model EV-659A) could be your upgrade ticket if you want a little more resolution than you are getting out of your current low res. monochrome or color graphics adapter. It provides all the features of IBM's Enhanced Graphics Adapter, Paradise Systems' Autoswitch EGA Card and Video 7's VEGA Deluxe, and more! It features automatic mode switching, 256K of video memory, and will run the following modes: MDA, HGC, CGA, EGA 640 x 350, and even VGA 640 x 480 16 color if you have a multisync monitor. It will also support composite video with its two RCA jacks if you do not have a normal 9-pin data monitor. The software diskette (included) comes with drivers for AutoCAD, GEM, Ventura, and more...All this for **$59.00!**

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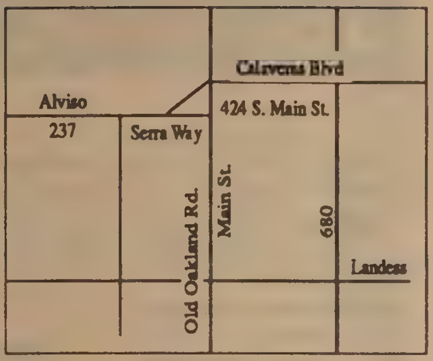

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CWEST—Commodore 64/128. Call: (415)626-9946. BBS, (415)552-9320. [Exp. #80.]

Fairfield Commodore User Group. Meeting: 1st and 3rd Mon., 7:30 pm, Solano County Board of Education Bldg., Texat St., Fairfield. Amiga, Commodore 64, 128, PC-40-III. Call: (707)427-6805 or Newsshop BBS (707)446-7235. [Exp. #76.]

North Valley Chapter Of 64/More Commodore User Group. Meetings: 2nd Sat., 10:00 am, Milpitas Library. Call: (408)262-9334. [Exp. #76.]

San Jose Chapter Of 64/More Commodore User Group. Meetings: 1st Sun., 6:00 pm, Mercury Savings on Blossom Hill. Call: (408)262-9334. [Exp. #76.]

dBASE

DataEase User Group. Meetings: 4th Thurs., 3:30 pm, 101 Montgomery St. Call: (415)945-7817. [Exp. #76.]

dBASE IV SIG. Meetings: 1st Tues., 7:00 pm, Ernst & Young, 55 Almaden Blvd. (Plaza Bank Bldg), San Jose. Special interest group of the Silicon Valley dBASE Language Group. Call: Fletcher Johnson, (408)283-1333. [Exp. #78.]

dBASE SIG/SFPCUG. Meetings: 3rd Mon., 6:15 pm, UCSF, 333 California St., San Francisco. Call: Mark Webster, (415)647-3675. [Exp. #79.]

DESKTOP PUBLISHING

Desktop Publishing SIG/SFPCUG. Meetings: 3rd Tues., 6:00 pm, 660 Market St., Ste. 215, San Francisco. Call: Eric Leong, (415)635-0159. [Exp. #78.]

Ventura Publishing User Group (formerly VPUG). Meetings: 3rd Mon., 7:00 pm, 384 Jackson St., Rm. 12, Hayward. Call: Elinor Cruz, (415)366-5317. [Exp. #81.]

Ventura SIG/SFPCUG. Meetings: 3rd Tues., 6:30 pm, 660 Market St., Ste. 215, San Francisco. Call: (415)391-1333. [Exp. #76.]

EAGLE

Eagle Computer Users Group. Meetings: 2nd. Sat., 9:00-12 noon, Tandem Computer, 10435 N. Tantau Ave., Cupertino. Call: (408)972-1965. [Exp. #76.]

EPSON

Bay Area Epson Salts. Meetings: 2nd Tues., 7:30 pm, 2611 Broadway, Redwood City. Call: Joe, (415)364-9232, or Tom, (415)992-5475. [Exp. #80.]

FOCUS

NC FUSE—Northern California FOCUS Users. Meetings: quarterly. P.O. Box 61325, Sunnyvale, CA 94088-1325. Sharing FOCUS knowledge and experience. [Exp. #76.]

GENEALOGY

Contra Costa County Genealogical Society/Computer User Group. Meetings: 1st Sat. of odd-numbered months. Call: Susan, (415)372-6996. [Exp. #80.]

Contra Costa PAF User Group. Meetings: Last Sat., Call: Susan, (415)372-6996 or Julia, (415)933-6555. [Exp. #80.]

Family Roots Genealogy Program User Group. Meetings: Jan, March, May, July, Sept, & Nov. For info: Joseph L. Rick, 135 Leslie Dr., San Carlos, CA 94070-3459. Include SASE. [Exp. #76.]

Genealogy SIF/SFPCUG. Call: Tom Rubens, (415)255-9516. [Exp. #78.]

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Basic SIG/SFPCUG. Meetings: 3rd Mon., 7:30 pm, UCSF, 3333 California St., San Francisco. Call: Tom Rubens, (415)255-9516. [Exp. #79.]

Berkeley PC/Compatible User Group. Meetings: 2nd Mon., 7:00 pm, Winners Circle, 2618 Telegraph Ave. Call: (415)845-4814 or (415)526-4033. [Exp. #80.]

C Language SIG/SFPCUG. Meetings: 2nd Mon. Call: Victor Pribyl, (415)355-8352. [Exp. #79.]

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EastBay FOG. Meetings: 2nd Wed. All microcomputers, MS-DOS, CP/M. Call: (415)272-9099. [Exp. #80.]

Games SIG/SFPCUG. Meetings: 3rd Mon., 6:15 pm, UCSF, 333 California St., San Francisco. Call: Ron Feiertag, (415)255-9516. [Exp. #79.]

Investment Software Association, a SIG of San Francisco Business Computers. Meetings: 4th Tues., 5:30 pm, Donatello Hotel at Post and Mason. Call: (415)788-5388. [Exp. #76.]

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NBUG, North Bay User Group. Generic computer club for all computer users. SIGs for Mac, IBM, Apple and Commodore, monthly newsletter and p.d. software. Call: (707)644-9327 or 552-0104. [Exp. #79.]

PC BasicS. Meetings: 3rd Mon., 7:30 pm, Micro Age Computers, Sunnyvale. SIG of Silicon Valley Computer Society. Call: (415)326-2435. [Exp. #80.]

PC Clubhouse. Meetings: 1st Fri., 8:00 pm, CSU, Hayward, Room 202, Meiklejohn Hall. To allow computer users to share knowledge and public domain/shareware software. Call: (415)483-9500. [Exp. #77.]

Peninsula Computer Club—KayFun. Meetings: 2nd Thurs., 7:30 pm, Social Room, 222 Laurel St., San Carlos. DOS and CP/M libraries. Call: (415)593-3391 or BBS (415)571-9259. [Exp. #78.]

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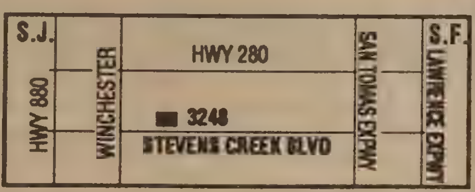

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USER GROUPS

San Francisco PC Users Group. Meetings: 3rd Mon., 7:30 pm, UCSF Laurel Heights, 333 Califronia St., San Francisco. Call: (415)221-9166. [Exp. #78.]

San Lorenzo User Group. Meetings: 2nd Tues. and the 20th, 7:00 pm, Gathering Place in Ben Loman, Santa Cruz County. Call: Chuck Schafer, (408)338-7348, BBS (408)335-4672. [Exp. # 81.]

Stanford/Palo Alto Users Group For PCs. Meetings: Last Wed., 7:30 pm, Stanford Campus, Jordan Quad, Polya Hall, Turing Aud. Call: (415)329-8252. [Exp. #80.]

Telecommunications SIG/SFPCUG. Meetings: 3rd Mon., 6:15 pm, UCSF, 333 California St., San Francisco. Call: Tom Rubens, (415)255-9516. [Exp. #79.]

WordPerfect SIG/SFPCUG. Meetings: 3rd Mon., 6:30 pm, UCSF, 3333 California St., San Francisco. Call: (415)821-1310. [Exp. #79.]

KNOWLEDGE-MAN

Bay Area KnowledgeMan (And Guru) User Group. Meetings: 1st Tues., 6:30 pm, JNZ, Inc., Lafayette. A forum for discussion and info. concerning mdbs products, esp. KnowledgeMan and Guru. Call: (415)947-4878. [Exp. #78.]

LAPTOPS

Bay HPX HP Laptops & Handhelds. Meetings: 2nd Sat. Call: Michael Felsenstein, (415)564-8279. [Exp. #76.]

MACINTOSH

AHUG—Apple Hypercard Users Group. Meetings: 1st Fri., 7:00 pm, Cupertino. Guest speakers & stack downloading. Call: (408)974-1707 [Exp. # 76.]

Mac SIG DUAU. Meetings: 3rd Tues., 7:00 pm, Willow Creek Center, 1026 Mohr Lane, Concord. The perfect place for beginners and old timers. Call: (415)676-9905. [Exp. # 80.]

Macintosh Application Group. Meetings: TBA. Call: (415)751-9185. Main focus is application support for the user and language programming, all levels. Newsletter is in the making. [Exp. #76.]

MacSEF. Meetings: 3rd Tues., 7:00 pm, Call: Tony Meadow, (415)644-9400. [Exp. #79.]

North Coast Mac Users Group. Meetings: 3rd Wed., 7:30 pm, Sonoma State University, Darwin Hall, Rm. 108. Not a student organization, annual dues for individuals and businesses. Call: Reed Hopkins, (707)542-1089. [Exp. #76.]

Peninsula Apple/Macintosh Users Group. Meetings: 3rd Thurs., Ampex cafeteria, Redwood City. Call: Les Dyer, (415)591-2124. [Exp. #76.]

MARKETING

HTEC Marketing SIG. Meetings: 4th Wed., 6:30 pm. Call: Hal Johnson, (415)441-6897. [Exp. #81.]

MULTIMEDIA

MacroMind Multimedia User Group. Three active SIGs: Lingo, Production/Design, Video. Call: Ken Durso, (415)442-0200 ext. 202. [Exp. #79.]

The International Interactive Society—IICS. Meetings: 2nd Tues., 7:00 pm, UCSF Laurel Heights Conference Center. Call: (415)328-7318. [Exp. #76.]

MUSIC

MuSIG. Meetings: 1st Sun., 2:00 pm. Various locations. Call: (415)858-1493. [Exp. #79.]

NETWARE

Central Valley NetWare User Group. Meetings: To be determined. Call: Rick Utley, (209)825-7063. [Exp. #76.]

NEURAL NETWORK

Neural Network User Group. Call: David (415)644-2369. [Exp. #79.]

OS/2

Smalltalk VPM Experts. Meetings: 3rd Thurs., 7:30 pm. Call: Dave Hurrell, (408)866-4647. [Exp. #81.]

PARADOX

Paradon SIG/SFPCUG. Meetings: 3rd Mon., 6:15, UCSF, 333 California St., San Francisco. Call: Richard Haven, (415)549-9109. [Exp. #79.]

San Francisco Paradox User Group: BAPALS. Meetings: 4th Tues., 4:00 pm, SF State Downtown Center, 814 Mission St., Suite 206. Call: Brad Jung, (415)287-5833. [Exp. #77]

PROGRAMMING LANGUAGES

Smalltalk/V User Group. Meetings: Last Thurs., 6:30 pm. Call: David Freihofner, (415)362-4283. [Exp. #76.]

Smalltalk/V SBUG (South Bay User Group). Meeting: 2nd Thurs., 7:00 pm. Call: Dave O'Neal, (408)929-1969. [Exp. #76.]

R:BASE

East Bay R:Base User Group. Meetings: 4th Thurs., 8:30 am, Call: David, (415)548-4927. [Exp. #76.]

R:Base Users Group Of The East Bay. Meetings: Last Thurs., 9:00 am. Call: Longwell Assoc., (415)451-5316. [Exp. #80.]

SALEMAKER

Bay Area SaleMaker Plus User Group. Meetings: 3rd Wed., 6:30 pm, various locations. Call: Judy, (415)964-1500. [Exp. #79.]

SQL

SQL_Forum. Meetings: 1st Thurs., 6:30 pm, 394 Pacific Ave., San Francisco. Discusses client/server computing and SQL database servers. Speakers, demos. Call: (415)695-2748. [Exp. #78.]

SQL Server User Group. New, call for information. Call: Patty Sellers at Marathon Systems, (415)362-0500. [Exp. #76.]

TEXAS INSTRUMENTS

Texas Instruments Professional Computer Users Group. Meetings: 4th Thurs., Magnolia Inn, 176 S. Bernardo, Sunnyvale. Call: Thor, (415)386-5237, or Dr. Bill, (415)671-5237. [Exp. #81.]

UNIX/XENIX

UNIX/XENIX User Group Of N. CA. Meetings: Call: Ren Just, (707)664-0820 or BBS (707)795-1721. [Exp. #80.]

WINDOWS

Windows 3 & Applications SIG/SFPCUG. Meetings: 3rd Mon., 6:15 pm, UCSF, 333 California St., San Francisco. Call: Ron Person, (707)539-1525. [Exp. #79.]

> **There are many choices to make even after you've chosen a brand. In order to make those choices, you need a competent salesperson to help make sure you're getting a system that matches not only your current needs but also your future ones.**

Continued from page 174

have some of the same skills as good salespeople. For example, you may need to talk directly with them to tell them what happens (or, more likely, doesn't happen) when you try to use your PC. They must be patient with novice users who don't use the right words, but not condescending to users who have a good idea of what is going wrong.

MAIL ORDER?

If you subscribe to national magazines like *PC Magazine* and *PC/Computing*, you see a barrage of ads from mail order houses trying to sell you brand-name and no-name clones. Should you buy from a mail-order house or a local store?

An obvious disadvantage of buying mail order is getting a broken PC fixed. Most mail-order vendors will cheerfully fix a system for free—as long as you ship it to them at your expense and are willing to wait for the machine to get there and back. Some even offer on-site service, although the value of this is debatable unless the service people are very familiar with the particular brand you use.

We in California are blessed with literally hundreds of local computer stores. Even a two-hour drive to your dealer in rush-hour traffic is almost guaranteed to get you less expensive and faster service than mailing off your PC. If you compare prices, the local no-name clone is probably around the same price as no-name mail order clones, and brand-name clones are only slightly more expensive from local stores. Most mail order companies usually don't offer much better service than the average local store, and often have the same turnover problems in their staff.

CONCLUSION

After you decide where you want to buy your PC, your next step is to decide what you want. The first decision only gets you to the point of plunking down money; the second tells you how much you have to spend. The next article will lead you through the labyrinth of choices you need to make before you can get the PC out the door and into use. ■

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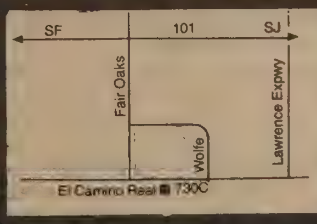

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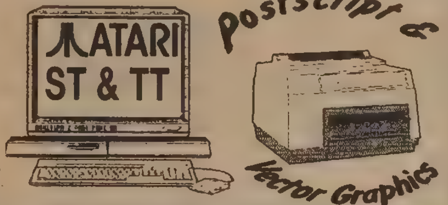

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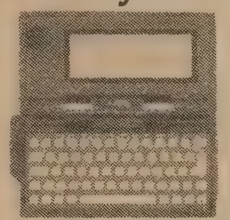

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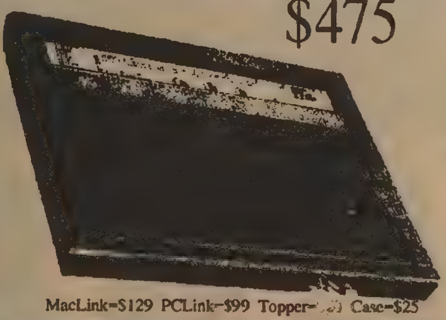

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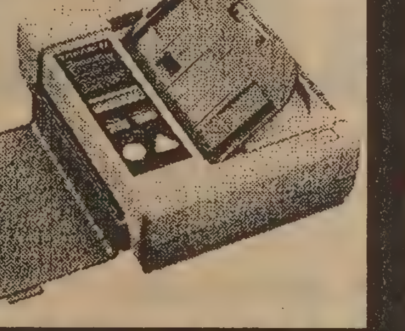

The Cambridge Z–88 may just be the answer to your portable needs. It has a full size keyboard with an excellent wordprocessor, database and spreadsheet built in and interfaces perfectly to upload and download files to your large computer. Best of all it is the size of a Newsweek magazine and weighs less than two lbs and can have as much as 4 megs of RAM in it. The Z–88 was designed by Sir Clive Sinclair for students and journalists whose main portable needs are word processing. The keys make no sound, and Jerry Pournelle of Byte has said it is the only computer he would take to a White House Press Conference. Jerry also said he "never goes anywhere without Sir Zed." We recommend a PC or Atari package with case, link, batteries and 160k RAM for $650, and the Mac version for $680. If what you really need in a notebook computer is a notebook, why spend thousands of dollars for technology you don't need? The Z–88 will be viable technology for years to come.

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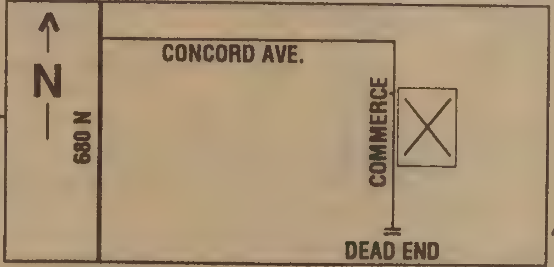

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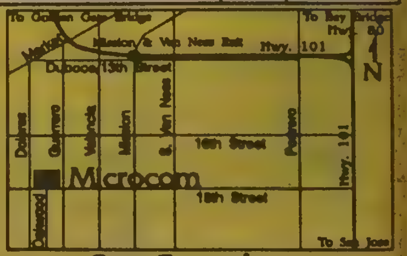

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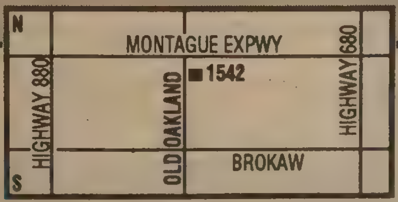

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Due to our special next issue, Dec. 10, 1990, we will be unable to accept any classified word or display advertisments until the following issue. Jan. 21, 1991

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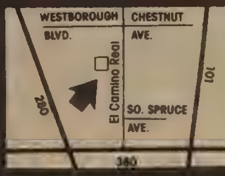

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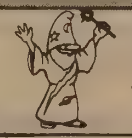

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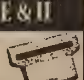

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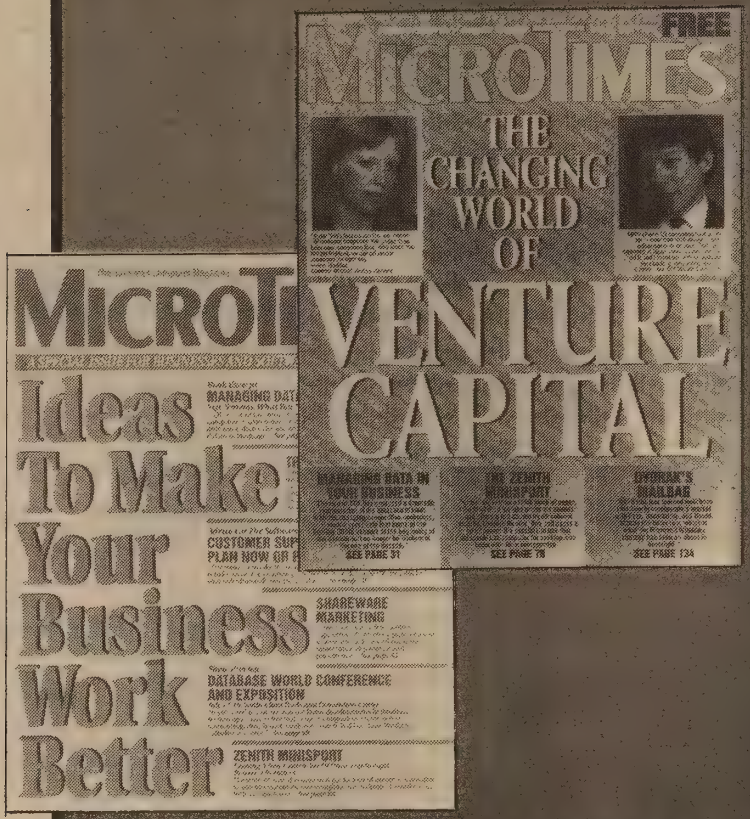
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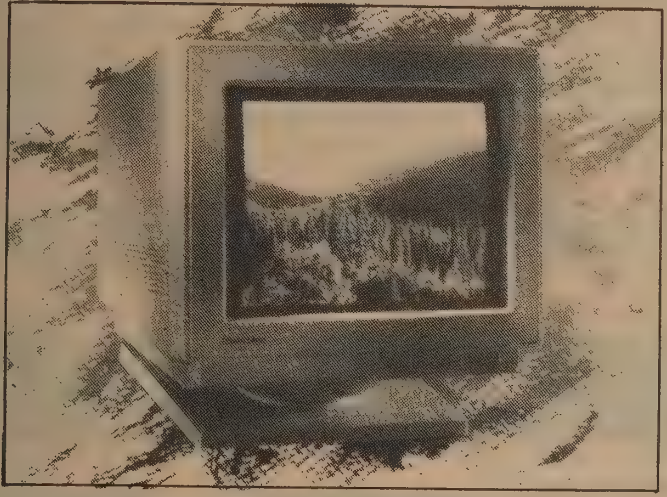

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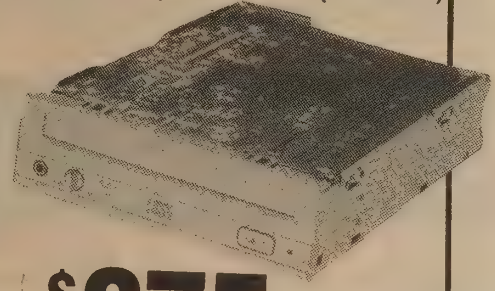

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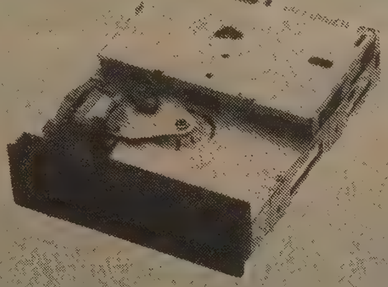

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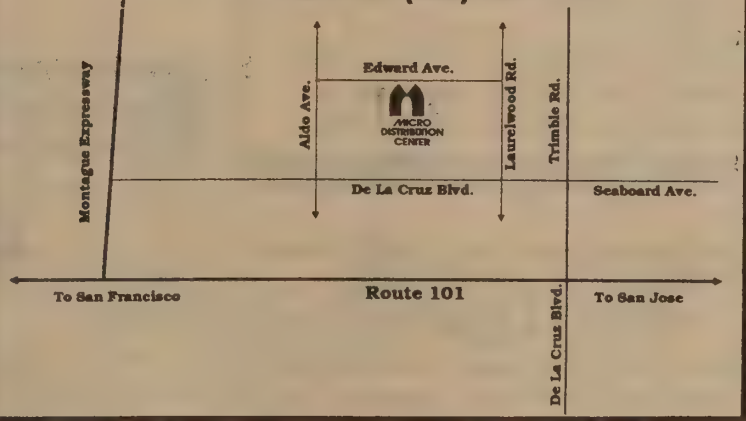

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w/ 80 MB	$949	$1,039	$1,089	$1,189	$1,339	$1,399	$1,299
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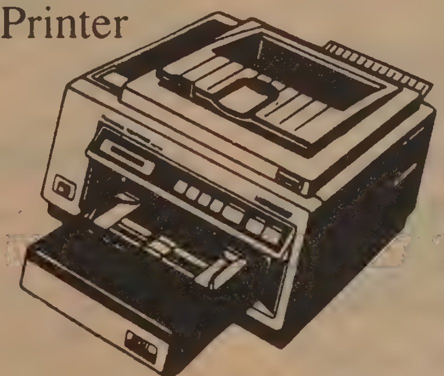

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50Z,55SX, 65SX	2MB MODULE	6450604	$ 950	$ 175
55SX,65SX	4MB MODULE	34F2933	$2,195	$ 549
50, 50Z, 55SX, 65SX	2-8MB EXP BRD w/2MB	1497259	$1,350	$ 575
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	2-8MB EXP BRD w/6MB	1497259+	$2,830	$875
	2-8MB EXP BRD w/8MB	1497259+	$3,620	$1,025
70-E61, 70-061, 70-121	1MB MODULE	6450603	$ 450	$ 89
	2MB MODULE	6450604	$ 950	$ 175
70-A21,A61, B21,B61	1MB MODULE	6450603	$ 450	$ 89
	2MB MODULE	6450604	$ 950	$ 175
	2MB MODULE	6450608	$ 950	$ 183
70-All Models 80-All Models	2-8MB EXP BRD w/2MB	6450605	$1,295	$ 479
	2-8MB EXP BRD w/4MB	6450605+	$2,890	$ 629
	2-8MB EXP BRD w/6MB	6450605+	$4,185	$779
	2-8MB EXP BRD w/8MB	6450605+	$5,480	$929
	2-14MB EXP BRD w/2MB	34F3077		$577
	4-16MB EXP BRD w/4MB	34F3011		$975
80-041	1MB BOARD	6450375	$ 675	$ 135
80-041,071	2MB MODULE	6450372	$1,295	$ 429
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80-All Models	1MB MODULE	6450603	$ 450	$ 89
	2MB MODULE	6450604	$ 950	$ 175
	2MB BOARD	6450379	$ 950	$ 249
	4MB MODULE	34F2933	$2,195	$ 722
PORTABLE P70	2MB MODULE	6450604	$ 950	$ 175
4019/E LASER PRINTER	1MB MODULE	1039136	$ 450	$ 245
	2MB MODULE	1039137	$ 850	$ 339
	3.5MB MODULE	1038675	$1,495	$ 445
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	4MB MODULE	113132-001	$1,950	$ 359
DESKPRO 386/16	1MB KIT	108071-001	$ 635	$ 182
	4MB KIT	108072-001	$2,550	$750
	1-2MB EXP BRD w/1MB	108069-001	$ 650	$ 412
	4-8MB EXP BRD w/4MB	108070-001	$2,550	$1,236
DESKPRO 386S	1MB MODULE	113646-001	$ 450	$ 128
	1MB BOARD	113633-001	$ 650	$ 285
	4MB MODULE	112534-001	$1,950	$ 365
	4MB BOARD	113634-001	$2,395	$ 595
DESKPRO 386/20,25	1MB MODULE	113131-001	$ 450	$ 129
	4MB MODULE	113132-001	$1,950	$ 359
DESKPRO 386/20E,25E	1MB MODULE	113131-001	$ 450	$ 129
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DESKPRO 386/33	2MB MODULE	115144-001	$ 950	$ 204
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	8MB MODULE	116561-001	$5,195	$1,960
PORTABLE 386	1MB KIT	107651-001	$ 650	$ 259
	4MB BOARD	107653-001	$2,395	$ 890
	4MB EXT BOARD	107654-001	$2,395	$ 985
PORTABLE III	512K KIT	107331-001	$ 269	$ 49
	2MB KIT	107332-001	$1,100	$ 164
PORTABLE LTE	512K BOARD	117077-001	$ 295	$ 197
	1MB BOARD	117081-001	$ 650	$ 239
	2MB BOARD	117081-002	$1,250	$ 277
SLT/286	1MB BOARD	110235-001	$ 650	$ 224
APPLE MAC				
PLUS,SE, SE30,II	1MB KIT	MO218	$ 250	$ 89
	2MB KIT	MO219	$ 450	$ 129
	4MB KIT	MO2707		$ 239
IIci	4MB KIT	MO292LL-A	$ 950	$ 259
	4MB MODULE			$ 546
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	2MB KIT	MO219	$ 450	$ 129
	4MB KIT	MO2707		$ 239
	4MB MODULE			$ 546
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	2MB KIT	500510-002	$ 345	$ 169
BRAVO 386SX	512K KIT	500510-010	$ 135	$ 54
	2MB KIT	500510-002	$ 345	$ 169
PREMIUM 286 ADVANCED	1MB KIT	500510-007	$ 260	$ 89
	2MB KIT	500510-002	$ 345	$ 169
PREMIUM WS286/WS386SX	512K KIT	500510-010	$ 135	$ 54
	2MB KIT	500510-002	$ 345	$ 169
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	1-16MB EXP BOARD	500722-004		$ 562
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	1MB KIT	A808231	$ 450	$ 142
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386SX	1MB KIT	A808231	$ 450	$ 142
	2MB KIT	A808101	$ 995	$ 212
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	4MB KIT	D1542A	$2,495	$ 325
VECTRA ES/12PC	2MB KIT	D1354A	$1,195	$ 162
VECTRA QS/20S, RS/25PC	1MB KIT	D1640A	$ 595	$ 115
	4MB KIT	D1642A	$2,495	$ 342
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LASER JET IIP,III	0MB BOARD			$ 99
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	2MB BOARD	H33475B	$ 890	$ 175
	3MB BOARD	H33476B		$ 278
	4MB BOARD	H33477B		$ 329
NEC				
POWER MATE 386SX	4-8MB EXP BRD		$2,295	$ 842
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T1600	2MB BOARD	PC8-PA8302U	$1,190	$ 270
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	2MB KIT	PC9-PA8341U	$1,190	$ 270
T3100SX	2MB BOARD	PC15-PA8308U	$ 950	$ 270
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T3200SX	2MB KIT	PC12-PA8307U	$ 990	$ 270
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	2MB MODULE	ZA3600-MG	$1,299	$ 188
	4MB KIT	ZA3600-MK	$2,695	$ 160
Z386/33	1MB MODULE	ZA3800-ME	$ 899	$ 95
	4MB KIT	ZA3800-MK	$2,695	$ 660
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	1MB BOARD			$ 288
	1MB EXP CARD	7PC-16AC		$ 215
	4MB KIT	ZA180-67		$ 878
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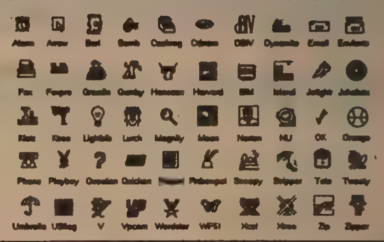

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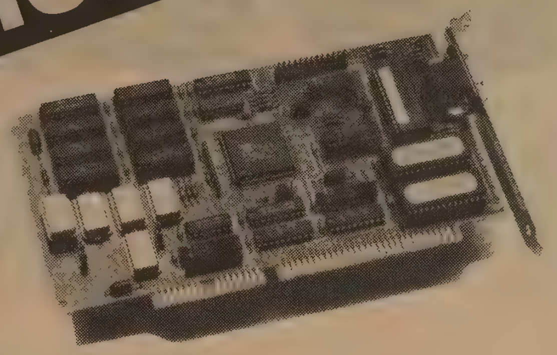

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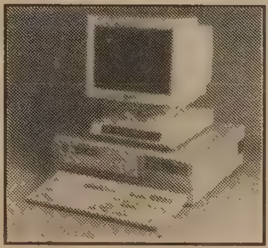

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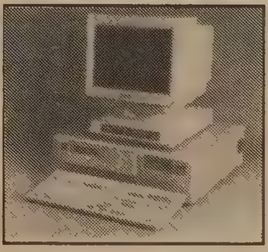

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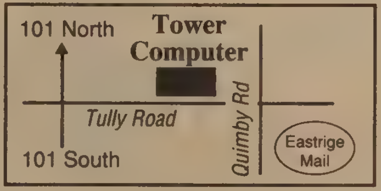

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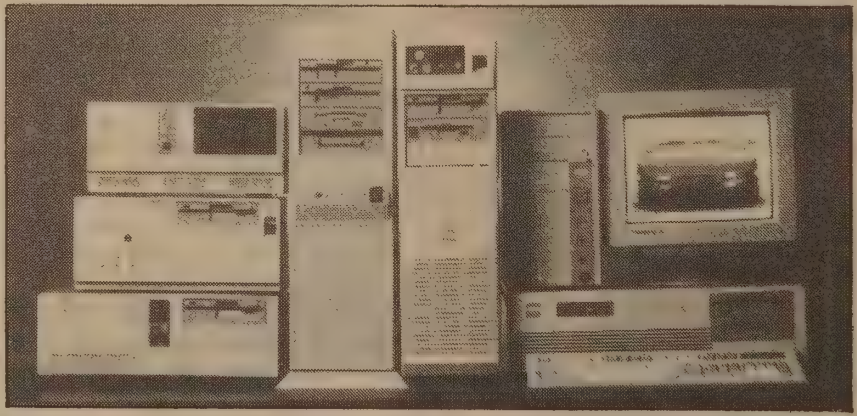

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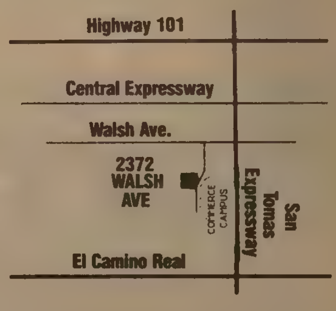

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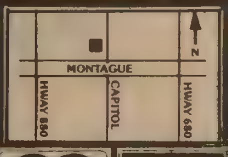

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Continued from page 70

Oh, they have John Sculley, who is, I think, a very good leader. It's a shame not to have what Steve Jobs brought to that company; it was a very valuable thing.

Apple's a very important company. They've invested a massive amount in R&D over the last four or five years, and their future is dependent on getting a lot of that R&D into concrete form. I think they have some super-good stuff they're going to contribute, and I certainly hope they do well, because I think it's a very positive dynamic to have another standard that is at critical mass pushing forward and taking risks. And certainly our advice to Apple has been to take risks in multimedia and voice and some of the really neat new things. I really hope they do that.

I don't want to compare Microsoft to Apple. But originally I got involved in this stuff because I was interested in organizations, and I thought of Apple as being the next thing in corporate forms. And at this point I'd say it's more likely to be Microsoft.

Microsoft has had the opportunity—we've been around a long time. We've made more mistakes than anyone, and missed more opportunities and things, and there's one thing I'll pat us on the back about—we see those mistakes and we learn from those mistakes.

And there's a few things like graphical interface, where once we decide we're going to do it, we just stick with it. Everybody thinks we're going to fail—"Why are you guys doing this? This is nonsense..." But we say, "Hm, we better make it better."

You don't spend a lot of time thinking about what the market wants before you take a new direction, do you?

No, you can't say that. We don't view that as the only input into the equation. There are some things that by seeing what can be done in hardware, and by understanding the underlying technology, we're willing to bet on—even though they're not at a stage where we can articulate it to end-users, they can understand it.

Then again there's an immense number of things—as we see Windows pushing forward, the vast percentage of that will be based on user feedback. There's this thing called object linking and embedding. And only in the vaguest way can I say end-users said to me, "Please! give me object linking and embedding! My insurance company depends on object linking and embedding!" [*laughs*] But it is sort of translating—actually, you saw quite a bit of it in this NeXT demo you just saw—the idea of mixed data. Where you have those little icons and those mail messages, that you could click on those things and there was the application. That's the key thing of object linking and embedding, is mixing those things around, not just in mail but also in a spreadsheet or a word processing document. Anywhere, you can have anything, and get to it.

That's what seems far out about the NeXT operating system to me. And I'm glad to hear that that's coming in your stuff.

It's coming with just changes in the applications. You don't even need an update in the system software. This is something you will see in Windows applications a lot next year.

It's good. [*laughs*] I think I saw it a few months earlier than I expected to.

To get back to Microsoft as an organization, it seems like you've managed to maintain, by some means or another, a human component there. The old organizational form—the Taylor School of Scientific Management form of organization—tried to eliminate the human content as much as possible. It tried to reduce everybody to some kind of homogenized unit that could be easily exchanged and replaced. That doesn't seem to be the way you run Microsoft at all.

We have a lot of unique individuals. This notion of how architects choose to work, how they choose to contribute to a company, that's very tailored to the individual. The way I work with the president is very tailored to how I like to spend my time, my particular set of skills. The way we do retreats or get together—it's all tuned to these differ-

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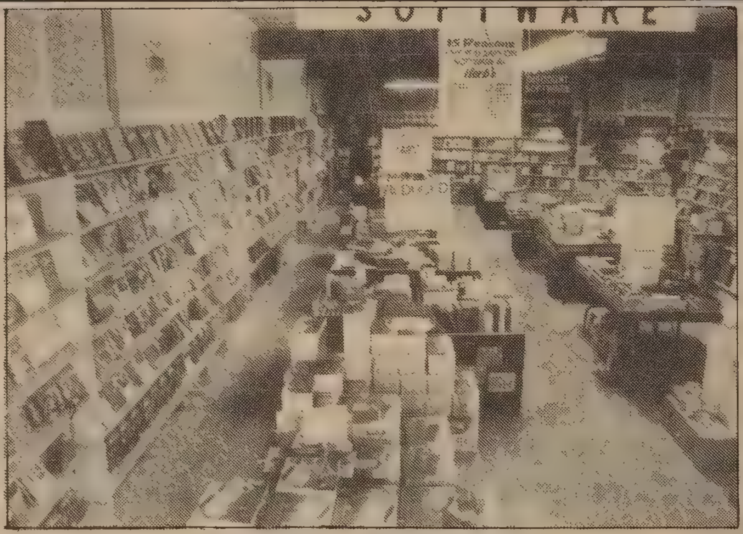

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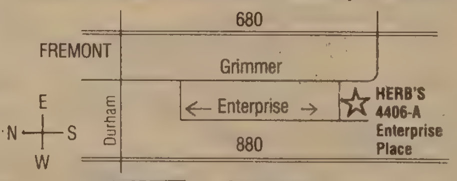

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ent groups. We have a lot of challenges because we've grown larger. Some things that were very easy to do as a small company are harder as you get large; people talk about "Yeah, you've got an advantage because of all of these products, your products will have synergy..." Hey, if we pull that off, that's an impressive thing. And yes, users will see some benefit there. It's certainly a challenge to us to have each product group winning in their category, doing the right things, and doing the things that are going to make the products work well together. And I feel very good about how we're proceeding about that, but it's not trivial.

> "I've been able to gather a lot of smart people around, it's been a lot of fun."

I spend a lot of time on the Net, and I feel like what we're really up to here—the Great Work—is connecting human consciousness. And right now the wide area connections that work are all UNIX-based. Do you see Microsoft becoming part of that process?

What does that *mean?* Do you think corporate networks are based on UNIX? You think Arpanet is based on UNIX? What the heck?

No, not corporate networks. But Usenet is, Internet is, the developing networks that I experience seem to be... Well, I don't want to put too much emphasis on UNIX as the operating system, but there's an awful lot of UNIX there.

In what sense?

I think you're confused technically. Usenet nodes—you wouldn't know if the Usenet node was not UNIX. You would never know. Never. Send Usenet mail up to Microsoft and—[*gasps*] My God! It's an OS/2 server! I hate to tell you! Did it feel *strange*?

What is UNIX?

So it's just a coincidence that so much of the Net is based on UNIX machines?

Not a coincidence. But it has nothing to do with the technology. Nothing to do with it. That's a layer of protocols. UNIX is like semaphores and memory management calls.

Let me rephrase the question then. Are you folks thinking about how to extend and beef up email over wide areas?

You bet. There's a couple of things we haven't delivered a strong message about, whether at the systems level or the applications level. Mail—this is true on both sides—there's a lot we can do there. We've done some limited stuff—our Mac mail product is a great product, does very well, but it doesn't have some of this compoundness and breadth of communications stuff that's important.

We have some exciting work going on. We're talking a lot with the fax manufacturers about what it would mean to have an intelligent fax machine that can tie in, or looking at what elements of the mail should be built into networking software. This stuff needs to be more integrated.

But there's other areas we have to work on. We don't have a nice graphical database front end that's out. We talked about all the stuff we need to do in networking. There's an immense amount of work that's obvious that Microsoft should do. ■

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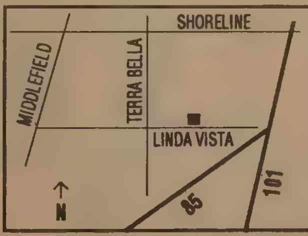

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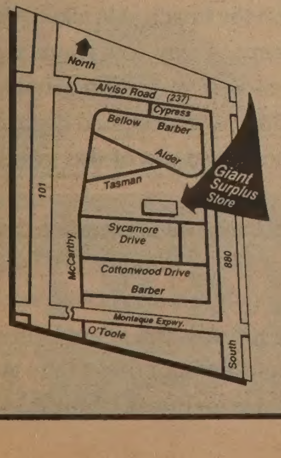
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COMDEX Is The Future—And The Future Looks Crowded

or One Day At The Show And I'm Ready To Leave—Pronto

BY JOHN C. DVORAK

John C. Dvorak graduated from the University of California. He is a contributing editor of PC Magazine *and* MacUser, *and is considered by many to epitomize the contrarian view of things—a charge that he vehemently denies. Dvorak's motto is: If you have nothing nice to say, then don't say anything at all.*

COMDEX is still going on as I write this column. You have to wonder, as the show approaches 125,000 attendees and more exhibits than ever, how big the show will get before it collapses under its own weight.

Shelly Adelson, the show promoter, bought the Sands Hotel as a way to hedge his bet. He didn't hedge completely, though, and he built a huge new Convention Center next to the hotel. Now the guy is vertically integrated. He sells the show space. He owns the convention center. He sells hotel rooms. He owns the hotel.

The problem is he doesn't own the town. Las Vegas is becoming a nightmare because of these shows. It's nearly impossible to go from point A to point B any time of the day without spending nearly an hour stuck in gridlock. These conventions are the cause. Vegas needs new roads and perhaps a monorail or a people mover system. It's unacceptable.

DVORAK'S LAST COLUMN

I wrote a column in *PC Magazine* some months ago, citing the studies indicating that the trade show industry is one of the hottest growth segments of the American economy. I concluded that trade shows are so hot because they are actually an efficient way of doing business. But how efficient is waiting in line or being stuck behind ogling jerk-offs who block the aisles as they look around for assistance from God to help them find their way out?

Many of the vendors with their idiotic song-and-dance acts are no help to efficiency. One of the vendors who should have been shot at this year's COMDEX was Brother. These jokers put a ping-pong table near a main thoroughfare. Two superslammers were playing a mean game of ping-pong and attracting a crowd so big that to get from one hall to another meant a huge circumnavigational maneuver. Who needs this aggravation?

The show wasn't my favorite. I cracked the screen on my Ultralite, I lost important business cards, I was hassled and harassed. Worse, the main hall was overheated and muggy. It was like a steam bath in there. I thought I was in Boston.

On the Monday of the show I arrived at 9:30 am and found all the parking lots jammed full. Of course I couldn't even get near the convention center on the main road to the convention center. It was backed up for a mile. I went all the way around and down a side street and ended up parking in a red zone at the Hilton. This was an hour before the show opened!

The lots were so stuffed with illegally parked cars that I figured no tow truck could get into the mess far enough to extract any cars. I was right. When I returned to my car in the late afternoon, it was an unbelievable scene, with cars parked on the planters and in all sorts of weird niches.

I could go into the halls early since I had an exhibitor's badge. The Las Vegas Convention Center—the largest in the world—was filled to the gills with showgoers already! They were all there with exhibitor's badges. I wonder, when I see something like this, if it isn't true that this industry simply sells itself most of its products. So even before the show really opened most of the vendors were selling selling selling. To each other! It was nuts.

When the doors were opened for the masses, it was a mess. People were in a frenzy. Jabbering, laughing, spitting all over each other, and they talked nonstop about everything. Yak yak yak. It was a din of noise. It was a sickening look at a crowded future.

The nuttiness of the show was only exceeded by the nuttiest of the two new Las Vegas showpieces. One is the Mirage Hotel, replete with a monstrous waterfall and whiz-bang special effects inside. For about fifteen minutes this was the biggest hotel in the world.

Down the street a maniac built a nightmarish mega-hotel with a Disney-like but bloated Sleeping Beauty's Castle facade at the front and (for some unknown reason) rear entrances. I think this hotel, the Excalibur, had 440,000 rooms or something like that.

> **I wonder, when I see something like this, if it isn't true that this industry simply sells itself most of its products. Even before the show really opened most of the vendors were selling selling selling. To each other! It was nuts.**

I'm sure catching an elevator in one of these monsters leaves something to be desired during the pre-show crush. Although I'm sure it would be more pleasant than being stuck at some revamped motel where a lot of suckers get rooms at Ritz-Carlton prices. I'm sure some interesting and unique kickback deals are part of those reservations.

So after only a few hours spent attending this hellish event, I have to rethink the *PC Mag* article praising the trade show concept. Too much of anything can be a disaster.

Today I realized that it was in Hawaii, while casually sipping a chilly frozen Piña Colada in an open bar on the beach at Waikiki, that I first began to like the trade show concept. A guy was there at the bar discussing architecture, and trade show/convention centers in particular. He was one of the top four guys who designed these monster buildings. He was the one who convinced me of the trend and its importance.

As I sit here in a suite at the Alexis Park, dreading going to bed and having to face another miserable mass of humanity, I realize that when you're in Hawaii sipping tropical fruit drinks, the warm trade winds gently blowing any pollution towards the general direction of Baja, these events seem more acceptable than they really are. Good luck to all of you faced with these events for the next hundred years. ■

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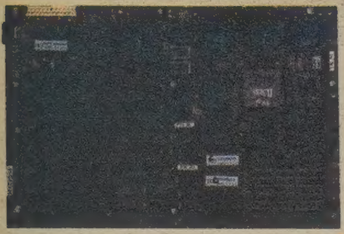

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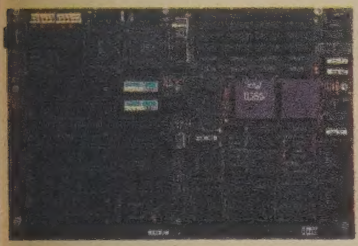

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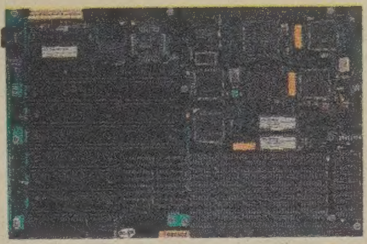

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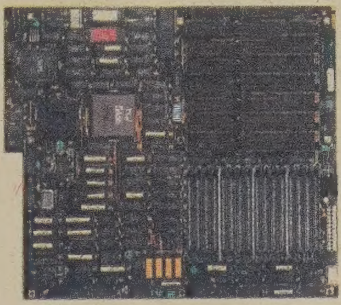

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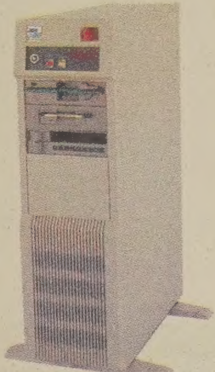

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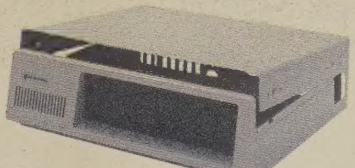

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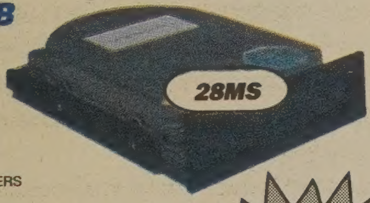

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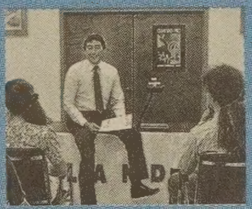

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I know that the HOLIDAYS find many people shopping for computer gifts. This year, to assist in your search for an appropriate choice, I am making our PCC (Personal Computer Consultant) Service available every weekend right through the month.

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—Dan Urioste, Manager

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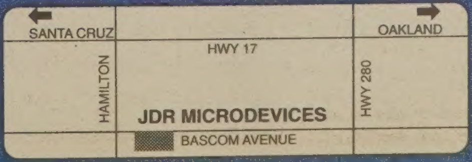
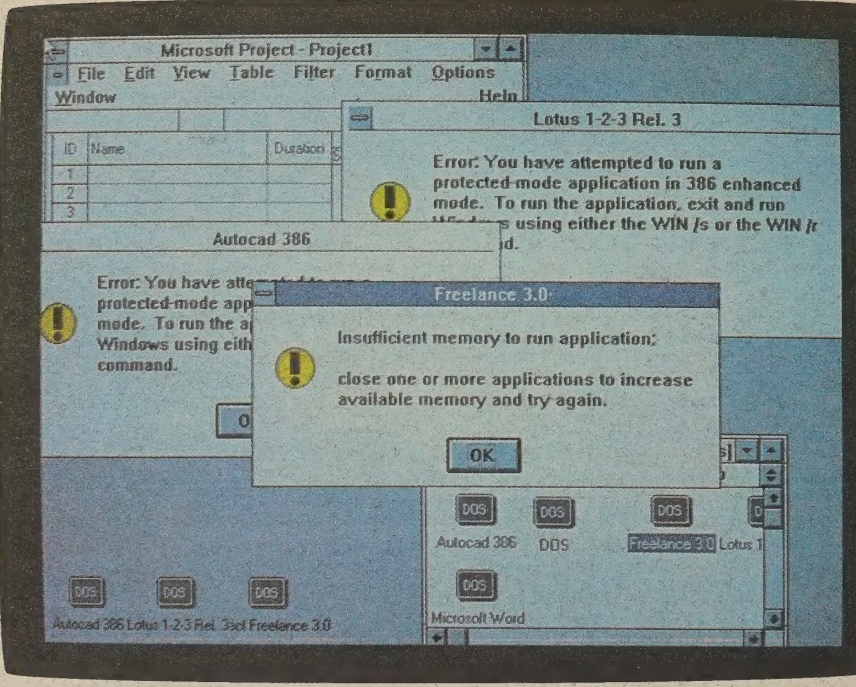


Is Windows 3.0 the end of DESQview™?

Not if you're still using DOS programs.


Microsoft Project - Project1
File
Edit
View
Table
Filter
Format
Options
Window
Help
ID
Name
Duration
Lotus 1-2-3 Rel. 3
Autocad 386
Freelance 3.0
OK
DOS
Autocad 386
DOS
Freelance 3.0
Lotus 1
Microsoft Word
Autocad 386
Lotus 1-2-3 Rel. 3
Freelance 3.0

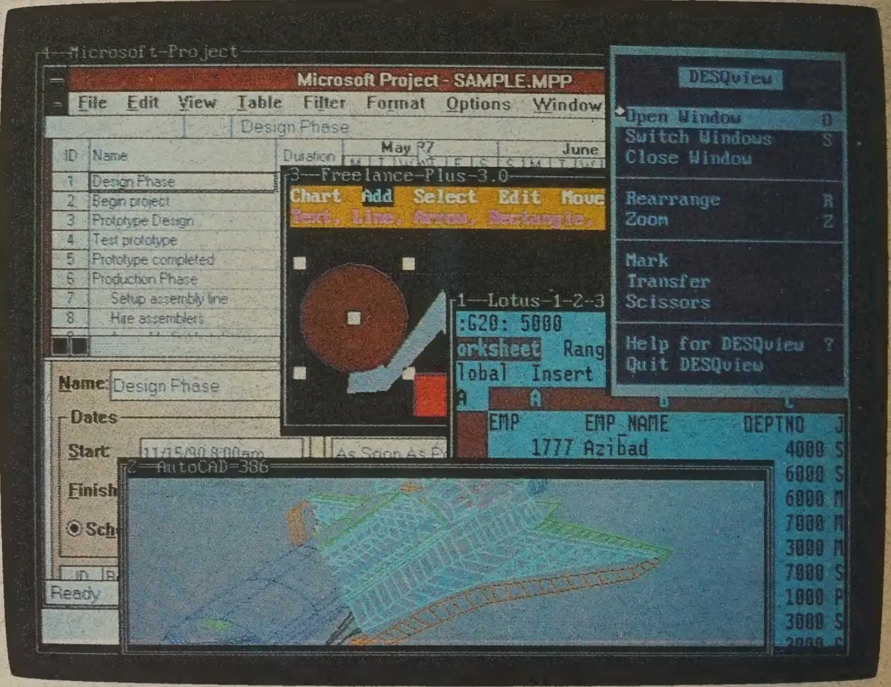
Error: You have attempted to run a protected-mode application in 386 enhanced mode. To run the application, exit and run W… s using either the WIN /s or the WIN /r …d.

Error: You have atte… protected-mode app… mode. To run the a… Windows using eith… command.

Insufficient memory to run application;

close one or more applications to increase available memory and try again.

Windows 3.0. The multitasking, windowing environment.


1—Microsoft-Project
Microsoft Project - SAMPLE.MPP
File
Edit
View
Table
Filter
Format
Options
Window
Design Phase
ID
Name
Duration
May 27
June
Design Phase
Begin project
Prototype Design
Test prototype
Prototype completed
Production Phase
Setup assembly line
Hire assemblers
Name: Design Phase
Dates
Start 11/15/90 8:00am
As Soon As P
Finish
Sch
Ready
3—Freelance-Plus-3.0
Chart Add Select Edit Move
Text, Line, Arrow, Rectangle,
1—Lotus-1-2-3
:G20: 5000
orksheet Rang
lobal Insert
EMP EMP_NAME DEPTNO
1777 Azibad
4000
6000
6000
7000
3000
7000
1000
3000
2—AutoCAD-386
DESQview
Open Window O
Switch Windows S
Close Window
Rearrange R
Zoom Z
Mark
Transfer
Scissors
Help for DESQview ?
Quit DESQview

DESQview 386 2.3. The multitasking, windowing environment.

Are you still using MS-DOS programs on your PC?

You may want to use DESQview as your primary operating environment.

The new DESQview 2.3 and DESQview 386 2.3 let you use your favorite DOS and DOS-extended programs in windows side-by-side on 80286, 80386 and i486 PCs. As you can see above, you can even run Windows programs within DESQview 386. So the next time you get error messages like the ones at the left in Windows, remember how the same set of programs look running in DESQview.

Whatever standard you use—DOS, extended DOS or Windows—DESQview is still the best way to get the most out of the hardware and software you own today.

DESQview. The obvious choice.

Quarterdeck

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This comparison was made using a system like the one you might run: Both shots show an ALR FlexCache 33/386 running DOS 3.3 with VGA display adaptor, Novell NetWare v3.01 Rev. A, with IPX/SPX v3.01 Rev A, Microsoft Mouse 7.00, and Microsoft SMARTDrive v3.03 disk cache. Buffers were set to 20. For the Windows screen, we ran Microsoft Windows 3 HIMEM.SYS and EMM386.SYS. For the DESQview screen, we ran QEMM 386 v5.1.

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